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## ORIGINAL LECTURES.

### ACUTE PANCREATITIS.

*A Consideration of Pancreatic Hemorrhage, Hemorrhagic, Suppurative, and Gangrenous Pancreatitis, and of Disseminated Fat-necrosis.*

*The Middleton-Goldsmith Lecture for 1889, delivered before the New York Pathological Society, Feb. 16, 1889.*

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(Concluded from page 286.)

### DISSEMINATED FAT-NECROSIS.

CONSIDERABLE prominence has necessarily been given to the necrosis of fat-tissue associated with pancreatic inflammations.

Hooper<sup>1</sup> probably intended to describe the appearances due to this condition; but Ponfick<sup>2</sup> first distinctly recognized the condition. He called attention to a disseminated necrosis of bone-marrow in a case of empyema and extensive amyloid degeneration. The appearance was that of innumerable, submiliary, yellowish-white specks in the amber-colored marrow. They proved to be composed of an agglomeration of large cells crowded with fine granules. These were enormous, granular corpuscles, which from their size and shape were regarded as identical with fat-cells. There were also narrow and elongated, fatty-degenerated cells, so disintegrated in many places as to form a finely granular detritus. Ponfick attributed these spots of necrosis to a fatty degeneration of the marrow.

Balser,<sup>3</sup> who became an assistant of Ponfick, then professor at Göttingen, found similar appearances in the marrow and in the subpericardial fat, each in an old man. In the examination of twenty-five unselected cases he found such patches in the region of the pancreas in five instances. Two of these patients died of cancer of the stomach, and the remaining three were cases of pulmonary consumption, hepatic cirrhosis, and aortic endocarditis respectively. There remain two additional cases in which he found fat-necrosis.<sup>4</sup>

These he regarded as illustrative of the fatal effect of a disease, fat-necrosis, which, when extensive, was associated with old and fresh hemorrhage. Such hemorrhages near the pancreas might produce death in a manner resembling that described by Zenker as pancreatic apoplexy.

He regarded the fat-necrosis as the result of an excessive growth of fat-tissue which destroyed the tissue it surrounded. From its association it was a special source of danger to fat persons. His conclusion is:<sup>5</sup> "an

excessive growth of the fat cells near the pancreas occurs in many men. It may become so excessive, in very fat people, that a large part of the abdominal fat dies, and it thus proves fatal, either on account of the quantity destroyed or the associated hemorrhage.

Chiari<sup>1</sup> had also found fat-necrosis associated with pancreatic disease,<sup>2</sup> although in his published report he made no note of the characteristic appearances. He confirmed Balser's statements concerning the occurrence of fat-necrosis in and near the pancreas. Since he had observed it in five out of six cases of pancreatic disease, a certain connection between the two was suggested. Three of these were cases of sequestration of the pancreas. The remaining three were a phthisical diabetic, a case of chronic Bright's disease and interstitial pneumonia, and an infant with congenital syphilis.

He found no evidence of an excessive circumscribed growth of fat-tissue, as claimed by Balser, but regarded the necrosis as a degenerative process analogous to the retrograde metamorphosis in other tissues, and the result of a severe marasmus. He admitted it as a cause of pancreatic hemorrhage and that it might, hence, prove fatal. He did not regard the sequestration of the pancreas as the result of this necrosis, since he could not understand how extensive circumscribed necrosis about the pancreas could isolate so large an organ.

Finally, Van Giesen<sup>3</sup> presented to the New York Pathological Society microscopical sections illustrative of fat-necrosis. They came from the pancreas of a woman eighty years of age. There were two nodules, the larger five mm. in diameter. Nothing is stated with reference to any associated lesions, and the necroses were regarded as degenerative.

There is a general agreement as to the appearance of these nodules. They are multiple, disseminated, are found in the subperitoneal fat-tissue of the abdominal wall, mesentery, omentum, and in that within and around the pancreas. Chiari<sup>4</sup> found them also in the subpericardial, subpleural, and subcutaneous fat. Their presence in marrow has already been mentioned.

Such nodules were present in one case of pancreatic hemorrhage, certainly in one, probably in two, cases of acute suppurative pancreatitis. They were seen in six cases of hemorrhagic and in six of gangrenous pancreatitis.

These nodules, in most of the cases, occurred in great numbers, the smallest not larger than a pin-head, and strongly suggestive of miliary tubercles or malignant new formations. The largest were of the size of a hen's egg. All were more or less rounded, of an opaque white or yellowish-white color, and of soft, tallowy consistency. They occurred alone or in groups, superficially and deep seated. The smallest were often surrounded by an injected vascular wreath, while many were bounded by

<sup>1</sup> Case XIX.

<sup>2</sup> Virchow's Arch., 1872, lvi. 541.

<sup>3</sup> Loc. cit.

<sup>4</sup> Nos. XXIV., LXVII.

<sup>5</sup> Loc. cit., 534.

<sup>1</sup> Prager med. Woch., 1883, viii. 285.

<sup>2</sup> Cases LVIII., LX.

<sup>3</sup> N. Y. Med. Rec., 1888, xxxiii. 477.

<sup>4</sup> Loc. cit., 285.

a distinct, narrow, reddish-brown zone, indicative of hemorrhage.

Chiari<sup>1</sup> found the larger nodules (although he does not state in which of his six cases) incrustated with lime, and surrounded by a distinct fibrous capsule, from which threads occasionally ran into the surrounding fat-tissue.

The tallowy material could be readily picked out of these nodules, and, when examined microscopically, consisted largely of acicular crystals resembling those found in fat, in addition to fat-drops and a granular detritus. Dr. Harrington's micro-chemical examination of these crystals shows their identity with those obtained from tallow. He regards them as stearine. In this view he confirms the conclusion reached by Balser.<sup>2</sup>

The microscopical appearances have already been described in sufficient detail.

Balser states<sup>3</sup> that his examination shows that the same process is concerned in the mild and fatal cases. Neither he nor Chiari was able to find any evidence of a bacterial or mycotic process, nor was the latter able to discover any changes in the neighboring vessels.

The microscopical appearances found in Case LXVII. make evident certain features in the more serious fat-necrosis, which supplement the results described by other observers.

Tracts of round-celled infiltration were found at the border of the patches. Chiari also states that the fibrous threads continued from the capsules were infiltrated with round-cells.

The surrounding fat-tissue gave frequent evidence of an acute lymphangitis, of abscesses, and of thrombosis.

Bacteria were found in and near the patches of necrosis. They were likewise present in a neighboring vessel and in a venous thrombus.

The association of these appearances with the evidences of fat-necrosis indicate most directly that the latter condition, in fatal cases at least, instead of being simply the result of a hyperplasia or of a degeneration, is connected with an acute, inflammatory process, somewhat akin to the phlegmonous inflammation of the subcutaneous fat.

The cause of its dissemination would thus, probably, depend upon the transfer of an infecting material, either through vascular currents, especially lymphatics, or by direct inoculation of the peritoneum in case of the superficial nodules. The multiple, disseminated fat-necrosis found associated with fatal pancreatic disease is thus to be regarded as the result of the inflammation of the fat-tissue extended from the pancreas or its vicinity. The pancreas is usually the seat of the primary process, but the necrotic inflammation of the fat-tissue may be secondary to a possible primary lesion of the biliary tract or stomach, as suggested by Cases LVII. and LVIII.

The spots of dead fat-tissue, observed in the marantic cases may be degenerative, as claimed by Ponfick and Chiari. They certainly are neither necessarily nor exclusively found in fat persons. There is no confirmatory evidence of their hyperplastic nature.

The inflammatory fat-necroses, in most cases, were associated with evidences of putrefactive conditions.

It would thus appear that there is a necrobiotic necrosis of the fat-tissue, and an inflammatory necrosis, the latter tending to become gangrenous, both of which may be

found within or near the pancreas. The inflammatory and gangrenous varieties are of especial importance in permitting the sloughing of the pancreas, and in most instances are the result of an acute inflammation of this gland.

Although the serious varieties of fat-necrosis may be recognized as causes for sequestration of the pancreas, their relation to pancreatic hemorrhage must be expressed in different terms from those employed by Balser and Chiari.

A simple, necrobiotic fat-necrosis may be associated with fatal pancreatic hemorrhage, as suggested by Case V., but there is no necessary etiological significance in this association. Most fatal cases of pancreatic hemorrhage occur without either variety, and the simple necrosis usually takes place without hemorrhage.

When the severe varieties of fat-necrosis accompany pancreatic hemorrhage, inflammation of the pancreas is present. The fat-necrosis cannot be regarded as the essential cause of the hemorrhage in such cases, since it occurs in suppurative pancreatitis when there is no hemorrhage in the pancreas.

Furthermore, when hemorrhages are found near the necrotic patches they are usually very slight and limited to the immediate vicinity of the patch.

#### CONCLUSIONS.

The evidence presented in this paper is intended to establish the fact that—

Acute inflammation of the pancreas is both a well-characterized disease, and one which is much more frequent than is generally thought.

It is of great consequence that it should be recognized, for the following reasons:

It represents a serious complication of what, by itself, is a relatively simple affection, viz., gastro-duodenitis.

It is an important cause of peritonitis, and one readily overlooked.

It has been repeatedly confounded with acute intestinal obstruction, and has thus led, in several instances, to an ineffective laparotomy; an operation which, in the early stage of this disease, is extremely hazardous.

#### METHOD OF ORIGIN.

Acute pancreatitis commonly originates by the extension of a gastro-duodenal inflammation along the pancreatic duct. It may also be induced by the occurrence of hemorrhage in the pancreas. This may be of traumatic origin, although usually arising from unknown causes. The pancreatic hemorrhage may likewise be secondary to inflammation of the pancreas.

#### PATHOLOGICAL ANATOMY.

The anatomical varieties are the suppurative, hemorrhagic, and gangrenous. The first may be acute, but is usually subacute or chronic. The second is generally peracute or apoplecticform. The gangrenous variety runs an acute course.

Suppurative pancreatitis may result in an evacuation of the abscess into the stomach or duodenum, or it may open into the cavity of the great omentum, which, transformed into a large peritoneal abscess, may, in turn, open into the digestive tract. Pylephlebitis and abscesses of the liver may follow. Disseminated fat-necrosis is comparatively infrequent.

<sup>1</sup> Loc. cit., 299.

<sup>2</sup> Loc. cit., 528.

<sup>3</sup> Loc. cit., 522.

Hemorrhagic pancreatitis usually proves fatal in from two to four days. The gross lesions are then those of hemorrhage within and near the pancreas, extending into the subperitoneal fat-tissue, perhaps as far as the pelvis. Peripancreatitis may be expected and disseminated fat-necrosis is common.

Gangrenous pancreatitis, although it may be secondary to a perforating inflammation of the gastro-intestinal or biliary tracts, usually results from a hemorrhagic pancreatitis, and proves fatal in the course of a few weeks. The gangrenous processes extend to the parapancreatic tissue, and produce more or less complete sequestration of the pancreas. The peritoneal wall of the omental cavity becomes inflamed, that covering the pancreas may be destroyed, and the sequestered gland may lie in the omental cavity, soaked in pus, and attached only by a few shreds. Both pus and pancreas may be discharged into the intestine. Splenic thrombophlebitis is not uncommon, but hepatic abscesses are rare. Disseminated fat-necrosis is frequent.

#### SYMPTOMS.

The common symptoms of acute pancreatitis are sudden, severe, often intense, epigastric pain, without obvious cause, in most cases followed by nausea, vomiting, sensitiveness, and tympanitic swelling of the epigastrium. There is often extreme prostration, frequent collapse, low fever, and a feeble pulse. Obstinate constipation for several days is the rule, but diarrhoea sometimes occurs. If the case does not end fatally in the course of a few days, recovery is possible, or a recurrence of the symptoms in a milder form takes place, and the characteristics of a subacute peritonitis are developed.

#### DIAGNOSIS.

The symptoms are essentially those of a peritonitis, beginning in the epigastrium and occurring suddenly, during ordinary health, without obvious cause. The diagnosis, therefore, is based on pain, tenderness, and tympany, limited to the region of the pancreas, and on the gradual development of a deep-seated peritonitis in the same place.

#### DIFFERENTIAL DIAGNOSIS.

The differential diagnosis lies, practically, between an irritant poison, perforation of the digestive or biliary tract, and acute intestinal obstruction.

An irritant poison is excluded by the history of the case and by the examination of the vomit.

Perforating ulcer of the stomach or duodenum is to be excluded by the absence of pain after eating, hemorrhage from the digestive canal, and cachexia. Acute perforation of the transverse colon is rare, and the resulting peritonitis progresses more rapidly and is likely to be general. Perforation from gall-stones is usually preceded by attacks of biliary colic and jaundice, while the seat of the pain is rather in the region of the gall-bladder than in that of the pancreas.

Acute intestinal obstruction is most likely to give rise to doubt. It is to be eliminated by determining, through injection, the patency and capacity of the large intestine; by the rarity, in the epigastrium, of an obstructed small intestine; by the immediate presence of localized tenderness, and by the usual absence of conspicuous general tympany, or limited distention of intestinal coils.

#### TREATMENT.

It is evident that all treatment, at the outset, can be nothing but palliative. With the formation of pus in the omental cavity comes the opportunity for the surgeon. The possibility of the successful removal of the gangrenous pancreas is suggested by the healthy condition of a patient seventeen years after he had discharged this organ from his bowels.

An unexpectedly early verification of the above conclusions has occurred within the week following the delivery of this lecture.

The case was that of a well-known gentleman of Boston, and presented so fully the symptoms above mentioned, that, when called as consultant, I was able to make a diagnosis of acute pancreatitis, which was eventually substantiated.

The following is a brief summary of the essential features of this case, which will, hereafter, be more fully reported:

The patient was suddenly seized, February 19th, while apparently in his usual good health, with a severe pain and tenderness a short distance above and to the left of the navel. This was followed by vomiting and a certain degree of prostration. The administration of nearly a grain of morphia gave relief. I saw him in the evening, and during the subsequent two days of his life. He died on the third day. The localized pain was more or less constant, with occasional severe twinges, and was also to be elicited by intercostal pressure in the splenic region. The sensation of a constricting band in the epigastric region was likewise mentioned. At the close of the second day the lower abdomen became sensitive in spots. There was vomiting on the first day, but not later, and the bowels were confined. The abdomen was somewhat distended and dull, except in the epigastrium. The pulse was moderately accelerated and the temperature slightly elevated.

The diagnosis lay between acute, mechanical intestinal obstruction, perforative peritonitis, and acute pancreatitis. The majority of the consultants agreed to the first as the most probable condition, and advised a laparotomy, which was performed on the third day. Spots of fat-necrosis were seen in the omentum, but there was no evidence of mechanical obstruction.

At the post-mortem examination the characteristic appearances of hemorrhagic pancreatitis were found, also numerous spots of disseminated fat-necrosis.

### ORIGINAL ARTICLES.

#### THE TREATMENT OF SPASMODIC CROUP WITH OPIUM.<sup>1</sup>

BY ARTHUR V. MEIGS, M.D.,

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By the term spasmodic croup I have meant to designate all forms of the disease characterized by the absence of false membrane, whether supposed to be simply spasmodic, inflammatory, or catarrhal,

<sup>1</sup> Read before the Philadelphia County Medical Society, February 27, 1889.



and my desire is to raise the question of what constitutes proper treatment, for the subject is one upon which my own views are very definite. Though the disease only in the rarest instances endangers life, and from that standpoint is not of much consequence, yet it is so very common and causes so much suffering that by proper treatment can in most instances be so readily prevented or relieved, that it is well worthy of our careful attention and consideration. The method of treatment I have always pursued was for many years used by the late Dr. J. Forsyth Meigs, and is described in Meigs and Pepper on *The Diseases of Children*.

It may be premised, in the first place, that in all severe cases the treatment must be begun by the administration of an emetic, and for this purpose, if it be necessary to have a prompt result, nothing will be found better than a teaspoonful of powdered alum mixed with a teaspoonful of syrup of ipecac. If emesis does not occur in ten, or at the outside fifteen, minutes, the dose may be repeated; the second, however, will not often be necessary. This is much better, if it seems desirable that an immediate result be attained, than any other of the emetics—ipecac alone, sulphate of zinc, or any of the preparations containing antimony. The latter I have always looked upon as unnecessary or even dangerous on account of the severity of their effects, though I confess that my personal experience with them has been of the most limited description. I have heard older members of the profession say that in former days, when it was the custom to administer Coxe's hive syrup or antimonial wine in large doses, and to place children in a warm bath, they had frequently seen them die of the complaint, and anyone who has read the letters of Gui Patin, who lived in the reign of Louis XIV., and at a time when almost a crusade was being preached by the physicians of France against the drug on account of the manner in which it was abused, will realize how much mischief it is capable of doing when injudiciously prescribed. For my own part, I am satisfied that any results to be had by its administration in croup can be obtained better, and much more safely, by other means.

The effects of most emetics in children, it must always be remembered, are sooner over and less severe than in adults, and, therefore, their use is often proper when it would be inadvisable to give them to older people. When the question is to be answered, in any case of croup, whether or not to give an emetic, the decision is not so important, for its administration can hardly do any injury unless antimony be used. I have seen a young child, within half an hour after emesis, sit up and eat hungrily. Alum and ipecac, given as has been recommended, act with great promptness, have the most marked effect in relaxing the laryngeal spasm, and, contrary to what is very commonly said of their combined

use, produce very little physical exhaustion and relaxation afterward.

When summoned to a case the first question the physician must ask himself and decide is, whether the indications are such as call for the administration of an emetic. This question must be answered by considering the matter of dyspnoea—if there be no dyspnoea emetics seem to me entirely unnecessary, nor do I give one if there be merely a hoarse voice and slightly noisy respiration without real difficulty of breathing. It is only when there is decided obstruction of respiration and retraction of the base of the chest and supra-sternal fossa that emesis is to be at once induced.

If it be decided that an emetic is unnecessary, then something else must be done. It is to be understood that I am now discussing the treatment just as I should if I had been called in in the middle or early part of the night probably, to see a child that had been seized, without previous warning, with a paroxysm of the disease. Having decided that the symptoms were not sufficiently urgent to make the administration of an emetic necessary I should order a dose of laudanum and ipecac, and at the same time give directions for a second dose if the first did not in the course of an hour produce a marked calming effect. By the judicious use of an opiate with ipecac if the case be not so severe as to demand the immediate and somewhat more violent action of an emetic, in my experience the spasm of croup can be better combated than by any other means I have ever tried, and when once a physician and judicious mother have combinedly learned to manage spasmodic croup in this way the disease, except when it occurs in its most violent forms, loses almost all its terrors in a household. Absolute perfection, of course, is not to be attained; and this holds true of our power of judgment of the precise dose of medicine to be given in any particular case of disease. But what is to be aimed at in croup is to give such an amount of laudanum as will produce a moderate but decided soporific effect without narcosis, and ipecac to relax spasm but not nauseate, and especially not to induce emesis. This end would be attained in adults ordinarily by giving about twenty drops of laudanum with fifteen of syrup of ipecac, with directions that a second dose to consist of ten to fifteen drops of laudanum with ten or fifteen of ipecac syrup be given after an hour, or later during the night if it should seem necessary. In children, of course, and it is only in children, practically speaking, that we ever meet the disease, the dose must be made less according to the age. I mention the doses which would be proper for adults merely as illustrating the therapeutic effect that it is my aim to attain, for the amounts of laudanum mentioned could with perfect propriety and safety be given to most adults.



In using this method of treatment of croup it is, of course, a great advantage both to the physician and patient, if the physician already knows from previous experience with the child, the exact quantity of laudanum and ipecac he will have to take to effect the purpose. In administering laudanum to any child that has never previously taken it, no one should ever do otherwise than begin with a minimum dose, and this too at the risk of failing to thoroughly produce an effect, because the event will prove the dose to have been too small for the particular individual. For a child two years old, the initial dose should not be more than two drops of laudanum with ten of ipecac syrup; this to be repeated after an hour, or any time later if necessary. By waiting an hour, a second dose can always, in my experience, be given with entire safety, for if the first has produced no decided effect in that length of time, the second will not produce too much. For an infant of two to six months the first dose, to keep properly within the line of safety, should be half a drop with five or six of ipecac syrup, this to be repeated in an hour if the first be insufficient. In older children the dose must be proportionally larger, and the precise amount to be given is very much a matter of individual judgment, for it is difficult to formulate a precise rule which can be held to rigidly at the moment of emergency.

It is a good plan often, when the case is a severe one, and an emetic has been judged necessary, after its action to wait half an hour, and then give one or two doses of laudanum without ipecac, to induce sleep and relax spasm. This seems often to prevent the recurrence of the attack toward morning, which is likely to take place if the emetic alone be relied upon.

The first night having thus been tided over, a moderate amount of opiate under all ordinary circumstances having been used, and an emetic given if needed, it becomes a question what is to be done next. Is the disease cured, and no further medication required, or does the condition of the child require further attention? Although in the majority of cases of spasmodic croup, by the time morning comes the child will have lost his hoarseness and fever, and will seem often as well as if nothing at all had happened, playing about cheerfully during most of the day if allowed, the disease generally, if left without treatment, returns a second, and even a third night, and the condition of the patient will often be more threatening with the return than it was at the onset. Here then certainly is an opportunity which promises much for preventive medicine, the branch of therapeutics which it is generally thought will effect the best that can ever be done by the science of medicine.

Knowing that the trouble is likely to return, the

child should be kept in bed the following day, and given every two hours minute doses of paregoric and ipecac, to which nitre may be added if there be fever. The doses should be so small as to be very gently relaxing, but the amount of opiate too little to induce any sleepiness, and that of ipecac to take away appetite, much less produce any nausea. This result will be most nearly attained in children between two and five years of age by the use of from five to ten drops of paregoric, and about five of ipecac syrup. As much as ten drops of the ipecac, and it is an amount I have very commonly seen given, is sufficient, when administered every two hours, to nauseate many children, and then the remedy becomes worse than the very disease itself, for nothing is so depressing to the general strength and vitality, and natural powers of resistance to disease, as long-continued nausea.

The child having, as already recommended, been kept in bed during the day, when the second night comes laudanum and ipecac should again be given at bedtime, with directions for a second dose if it seems necessary. To say bedtime is, perhaps, not so precise as is to be desired, but the proper time for the first dose is between six and nine in the evening, when the child is tucked in bed to sleep for the night. The doses should be such as already mentioned, unless it be judged that those given the night before were too small, in which case the amount may be increased to such an extent as seems advisable, the previous night's experience having given us a guide to the child's susceptibility to the drugs. During the second day also, the child should almost always be kept in bed, and the minute doses of paregoric and ipecac continued every two hours, and the laudanum with ipecac at bedtime again administered. After the third night, unless the case be one of unusual severity, the cough will become loose, and when this is the case there is no longer any likelihood of a return of spasm. In my own experience it has seldom happened, and then only in cases of great severity, that I have found it necessary to administer an emetic after the first night, though I am sure that if cases be left without treatment, the spasmodic symptoms are apt to be more violent the second or third nights than they were the first. Knowing that the trouble is likely to return, and having learned something of the individual child's susceptibility to opium and ipecac, it is much easier to prescribe, both with safety and confidence in ourselves, such a dose as will prevent the return of violent spasm, and this, it should be thoroughly understood, does not require the administration of any large dose of laudanum. As already stated, the effort should be to give such a dose as will produce an effect parallel to that of twenty drops of laudanum upon an average adult,

and it is always both safer and better to err upon the side of giving too little than too much. One difficulty that very commonly has to be met, is that on the day following an attack, if the child be at all feverish, the appetite will generally be very poor, or abolished, and this will naturally be attributed by anxious mothers to the medicine that was given; but if it be explained that it is due to the cold and the accompanying fever, there will usually be no trouble in having the treatment continued.

The treatment of the disease after the spasmodic symptoms have passed off it is not necessary for me here to discuss, for it must be that of coryza, or bronchitis, or both, according as the inflammatory process which had its origin in the larynx travels upward or downward, or in both directions, for it is sufficiently well known that an attack of spasmodic croup is almost always followed by, or perhaps more properly is, the first symptom of a cold of some sort:

It will not be amiss for me now to give a few quotations to show that I am not alone in the opinion expressed in regard both to the great value of opium in children's diseases and its entire safety when properly used.

In Meigs and Pepper on *The Diseases of Children*, as I have already said, opium is highly recommended as most valuable in cases of spasmodic laryngitis.

The following quotation is taken from West on *The Diseases of Children*, page 31:

"A third great remedy in the diseases of early life is opium in its various preparations; and with it may be classed, though separated by a wide interval, other sedatives. . . . Perhaps no remedies are so often needed in the diseases of early life as sedatives, for at no other age is the nervous system so easily disturbed. At the same time, the susceptibility to the action of narcotics and sedatives is so remarkable, and the evils which result from their unnecessary employment, or from their administration in excessive doses, are so serious, that some practitioners altogether abstain from their use. To do so, however, is to deprive ourselves of one of the most important classes of remedies, and of one for which no substitute can be devised."

Goodhart, on *The Diseases of Children* (edited by Starr), page 25, expresses the view that the dangers of the administration of opium to children are overestimated, but says that the initial dose should always be a small one.

Eustace Smith, in his book on *Disease in Children*, page 19, says:

"Opium, it is well known, should be given with caution. The remedy is, however, of extreme value, and if care be taken to begin with only a small quantity, and to postpone a second dose until the effect of the first has been ascertained, no ill effects can possibly be produced by the narcotic."

Again, in his *Clinical Studies of Disease in Children*, the same author, in speaking of the use of the drug, at page 18, says:

"It is, however, a medicine which is of especial value in the treatment of the diseases of infancy, and may be

given without fear if care be taken not to repeat the dose too frequently."

Having now described the method of treatment which in my hands has proved so efficacious, and up to the present time so free from danger, and by the above quotations having shown that some of the most highly considered and widely quoted authorities are of the same opinion in regard to the use of opium that I have myself expressed, I have only two things to add:

First, my opinion that an unusual susceptibility to the influence of the drug in children is not common, no more so than it is in adults, among whom, when it exists, it is called an idiosyncrasy, so rare is it. The reason that the use of the drug has had a bad name among physicians is because the initial dose given has so often been too great and not because the idiosyncrasy is common. The truth of this statement is borne out by the fact that so many of the authorities upon questions of diseases of children, and presumably the acknowledged authorities, are those who have had the largest experience and are, therefore, best qualified to judge, recommend the administration of opium as both valuable and safe. Most important of all, perhaps, for us to remember in coming to a decision whether or not we shall deny ourselves the use of the drug in treating the diseases of childhood, is the fact that even in those rare instances in which the idiosyncrasy does exist it is almost impossible, if the initial dose given be a sufficiently small one, that it should cause death. The usual result is that the child is slightly narcotized—made to sleep somewhat heavily—and the parents and physician are frightened lest worse should come of it. Shall we on this account deny our patients the many advantages to be derived from the administration of a drug the use of which will only be dangerous owing to our own lack of care?

Finally, it is quite incomprehensible to me why the use of opium should be decried when children, even the youngest, are freely given many other drugs which are confessedly much more dangerous, and the effects of which it is much more difficult to observe and control—as, for instance, chloral, aconite, antimony, arsenic, and belladonna. The last mentioned of these, belladonna, is a drug of which common report says children can take much larger doses relatively than adults, and yet it is the only one with which, up to the present time, I have ever in my own practice had any untoward effects among children. Some years ago I prescribed a cough medicine containing alum and half a drop of tincture of belladonna to the dose for two children aged respectively about three and five years. Two or three doses of this medicine were to be given an hour or more apart; the first when they went to bed and the others afterward if they did not sleep. In

the middle of the night I was summoned to the house, to find that two doses had been given to each child, and that the *younger* was in a sound sleep, more quiet and natural than she had enjoyed for many nights owing to the troublesome cough that had existed, while the *older* child was sitting up in bed wide-awake, with the pupils somewhat dilated, and the chest covered with a red rash. After watching the case for a time, I assured the mother that no harm would come of it, and the next day the child was as well as ever. This certainly was a marked instance of idiosyncrasy, for in the younger child the therapeutic effect was exactly what had been sought for, while in the older I had to deal with a mild case of belladonna poisoning. It was also a marked instance of what generally happens, if perchance a properly small dose of any powerful drug is given to a person who proves unusually susceptible to its influence, and it is that the effects are much greater than was desired, but in nowise dangerous and hardly very alarming.

It is unlikely that by my imperfect exposition of my views upon this subject I shall have persuaded anyone whose mind was already made up to the contrary, to come over to my side of the question, though it may be perhaps that those already of my opinion or in doubt about the matter, will be strengthened to pursue the method of treatment more boldly, or to try it. It is certain, however, that discussion of a subject has its good effects by causing opinion to crystallize more and more in the direction of the truth, and in this manner, at least, I trust my efforts will not have been entirely in vain.

#### THE PREVENTION AND TREATMENT OF CRURAL ADDUCTION.<sup>1</sup>

BY HENRY LING TAYLOR, M.D.,  
OF NEW YORK CITY.

MOST of the moderately advanced cases of hip disease that I have examined have presented an adducted thigh; and this is equally true of those who have first applied after the cure of their disease. Drs. Shaffer and Lovett in their admirable investigation of the "Ultimate Results of the Mechanical Treatment of Hip-joint Disease"<sup>2</sup> found 10° to 30° adduction in nearly one-half (11 out of 24) of the cured cases examined to determine this point; the report included only those cases treated at the New York Orthopædic Dispensary and Hospital who had been discharged cured not less than four years previously. There is no doubt that the proportion of adducted thighs in old cases cured by less thorough methods is considerably greater. Typically deformed old hip cases form one of the commonest and worst

classes of the permanently crippled, and as seen on our streets, more than three-quarters show an adduction easily observable in the carriage of the body; in addition the thigh is usually flexed and inverted, and the deformity and disability are sometimes so great as to doom the sufferer to crutches for life. Take a few examples of the condition of the hip-joint in cured cases that had been treated by methods other than properly applied traction.

CASE I.—Girl, twelve years old, first seen in 1880, having been free from symptoms of disease for five years. She had had right hip disease at five, lasting a year and a half. An abscess appeared in 1874, which discharged four months. Plaster bandage, short splint, and weight and pulley had been used, followed by crutches for two years; since then the patient had used one crutch. Examination showed a stiff hip, adducted about thirty degrees and considerably flexed and inverted. She wore a steel patten three inches high. This girl died of phthisis five years later.

CASE II.—Girl, eighteen, seen in 1880. She had had double hip disease in childhood. There were eight large cicatrices about the hip; none had discharged for two years. Both thighs were ankylosed and adducted. The right was drawn in the most, and it was also flexed, so that the popliteal space of the right limb came directly over the inner condyle of the left femur; the legs were crossed bringing the inner borders of the feet to the outside. The inner (small toe) edges were six inches apart. The patient walked from the knees, which were loose.

CASE III.—Male, eighteen, seen in 1883. Left hip disease in 1880. Leg and pelvis incased in plaster sixty weeks. Had been walking about and considered his hip well. There was but a trace of motion and the thigh was flexed and strongly adducted. When seen he was laid up with an acute abscess, probably extra-articular.

CASE IV.—Gentleman, fifty years old, seen in 1885. Right hip disease when about four years old, abscesses followed and discharged two or three years. Patient had gone around all his life with leg drawn up and in, until a year before, when, owing to appearance of pain and increase of disability, he took a crutch, which he had used since. Right trochanter was two inches above Nelaton's line. Thigh was flexed and extremely adducted. There was pain in the hip, though he bore no weight on it. He wore about five inches extra sole.

CASE V.—Gentleman, about thirty-two, seen in 1887. Right hip disease at four years, no abscess. Was walking in a year. Ankylosis with considerable flexion and adduction. Walked very fairly.

CASE VI.—A lady, about twenty-seven, seen in 1887. Disease of left hip-joint at three years. Treated by weight and pulley with plasters below the knee. Disease, including a relapse, lasted five or six years, most of which time she was off her feet; the later part of the time she walked on crutches. She had a flail-knee from improper application of the traction. Extensive hip motion, but there was 15° permanent adduction, and two and a half inches

<sup>1</sup> Read before the New York Academy of Medicine, Orthopædic Section, Feb. 15, 1889.

<sup>2</sup> New York Medical Journal, May 21, 1887.



shortening. Walked with cane short distances only, and disability was increasing.

This recital might be considerably prolonged, but perhaps enough has been said to give an idea of the condition in which patients are frequently left after the cure of their disease, when imperfect methods have been employed.

When a patient has suffered from hip disease, which was not arrested in the earliest stage, but has gone on to destroy portions of the joint tissues, it is still possible for him to make a recovery which will be more or less perfect according to the protection afforded by the treatment. The ulcers and erosions in the joint may heal and be repaired by bone and cicatricial tissue, rough places may be somewhat smoothed off, sinuses and abscesses dried up, and the joint left free from disease. Even when this favorable result takes place (and we regularly expect it under the protective plan of treatment) the patient recovers with a more or less useful, but still a functionally imperfect joint presenting one or more of the following conditions:

1. Impairment or loss of hip motion.
2. Joint instability.
3. Shortening and atrophy of the affected limb.
4. Malposition of the thigh, which may be permanently adducted, or rarely abducted, with flexion, and often with inversion or eversion.

Of these regular sequelæ of the disease the malpositions are certainly the most serious as regards the comfort of the patient and the usefulness of the limb, and probably the most preventable and curable. I have never seen a case of ankylosis in good position of one hip where the locomotion was not excellent, and I have seen several ankylosed cases where the abnormality of gait was so slight as easily to escape notice, owing to the nearly perfect compensation at the lumbar spine, the knee, and the opposite hip.

Take as illustration CASE VII., a young man of nineteen, whom I examined in 1885. He had had left hip disease at two years, and had been treated on the protective plan by Dr. C. Fayette Taylor for several years. He had had an abscess which had closed years before. Home coöperation had not been of the best, but he got well with ankylosis in perfect position. In 1885, nine years after leaving off treatment, he was in rugged health and walked freely without support, and with a scarcely perceptible limp. The thigh was ankylosed, moderately flexed, parallel to the median line, and the two legs were equal in length.

Last year I examined a former patient, a lady (CASE VIII.) twenty-eight years old, whose left hip became affected in 1881. She was treated by recumbency with weight and pulley for a year and a half without benefit. At the end of that time she came under my care; the thigh was slightly flexed and considerably adducted and there was deep fluctuation in front of the hip.

The adduction and fluctuation disappeared under protective treatment and she recovered with ankylosis in perfect position. At the last examination a year after her discharge, there was very slight flexion of the thigh, which was parallel to the median line. The affected limb measured one-quarter inch longer than its mate, as I convinced myself by repeated trials. Her health was robust, she walked freely without support of any kind and with a hardly perceptible abnormality.

Shortening after hip disease can be compensated, and, unless excessive, does not compromise the usefulness of the limb even when added to ankylosis. When a joint is so much eroded and relaxed as to afford no firm bearing, the limb may be less useful and the gait insecure, but this condition is not very common at the hip, at least in a disabling degree, except after excision. On the other hand, considerable flexion or abduction, or a moderate amount of adduction with or without actual shortening, seriously interferes with bodily equipose and harmonious muscular action, and tends to render the carriage so awkward and the gait so limping and difficult, that both the endurance and the locomotor capacity of the patient are much curtailed. Some flexion nearly always remains, and a moderate amount is favorable where stiffness exists, since it more readily than any other position permits both standing and sitting. Slight abduction of the thigh is also favorable, as it prevents crowding of the thighs and compensates shortening to a certain extent, but is not usually attained except as the direct result of special management.

Eversion ordinarily goes with abduction and inversion with adduction, but the association may be reversed. They are not usually very disabling in themselves.

Adduction is the worst of the malpositions and is bad in any degree. The pelvis is tilted up on the affected side, increasing practical shortening and bending the lumbar spine laterally in order to bring the limbs vertically parallel, balance is deranged, and spontaneous movements of the body and limbs are adjusted to an awkward position. Every muscle is used at a disadvantage, there is undue strain on the knee and back; the thighs are crowded together, and the patient's general health and vigor frequently suffer from the severe strain of movements performed under unnatural and hampering conditions.

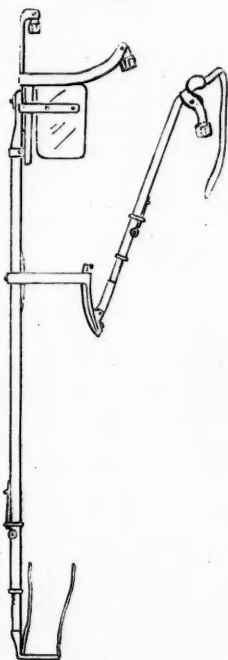
I have seen several cases where no cause other than crural adduction could be discovered for extreme rotary lateral curvature of the spine.

Adduction of the thigh from muscular spasm in the acute or progressive stages of hip disease is in some measure an index of articular irritation and in most instances readily yields to the protective traction required at that period, which can be adequately furnished by the long hip splint. The trac-

tion is always exerted in the line of the deformity, and is regularly combined with recumbency and the weight and pulley during the first few weeks of treatment. The leg falls easily into position as the spasm relaxes. Later in the treatment, if signs of irritation or tendency to deformity develop, the patient is again put to bed for a few weeks and the stretching repeated. Many cases treated from the early stages on this plan progress uninterruptedly toward recovery without the occurrence of deformity. In the rare cases in which properly applied traction fails to relieve the muscular spasm owing to products of inflammation confined in the joint, the tendency to adduction may continue until this is relieved.

Persistent adduction, especially in the recovering stages, or after the cure of the disease, whether from the severity of inflammatory irritation, subluxation of the eroded femoral head, neglect of proper treatment in the beginning, or from other causes, often requires special means to overcome it. The long hip-band carrying two perineal straps and the abduction screw were formerly employed for this object. With the idea of securing greater simplicity

FIG. 1.



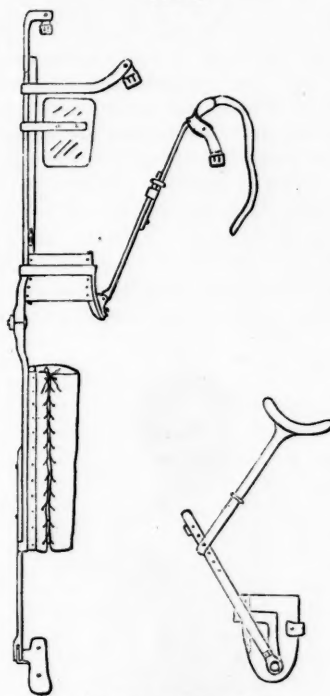
Traction splint.

and solidity of construction as well as greater precision of action the hip-band and abduction screw were discarded by Dr. Taylor some twelve years ago, and the traction splint used without a joint, the single perineal strap being carried on the anterior and posterior ends or horns of a properly curved

stiff steel bar riveted to the side plate of the apparatus. This splint (Fig. 1 shows front view with ratchet abduction crutch added) furnishes any desired amount of traction, and limits though it does not abolish motion at the hip-joint; it has given great satisfaction in practice.

In the regressive and recovering stage after the subsidence of inflammation, we have found great advantage in the use of the jointed supporting splint (Dows',<sup>1</sup>

FIG. 2.



Jointed supporting splint.

Fig. 2, front view with toggle abduction crutch added) which enables the patient to use the joint and limb without subjecting it to injurious pressure.

When a direct abducting force is required we add to the traction splint or Dows' an abduction crutch or attachment (shown enlarged at right of Fig. 2). This consists in a double (compound) steel bar acting as a toggle-joint, the lower end of which is pivoted to the knee-plate of the apparatus, and the upper end terminating in a properly curved steel band covered with hard rubber and accurately fitted to the ischial fold opposite the affected hip. The length of the bar can be varied by shifting the pin jointing its two halves. When the toggle-joint acts, a direct abducting force is put upon the

<sup>1</sup> In use sixteen or seventeen years, shown at the Amer. Orthopaedic Association Meeting, Washington, September, 1888. Its use as a supporting apparatus in weak joints after the excision of the hip has been suggested.

affected leg. This apparatus serves for comparatively mild cases or as a retaining apparatus after abduction has been produced.

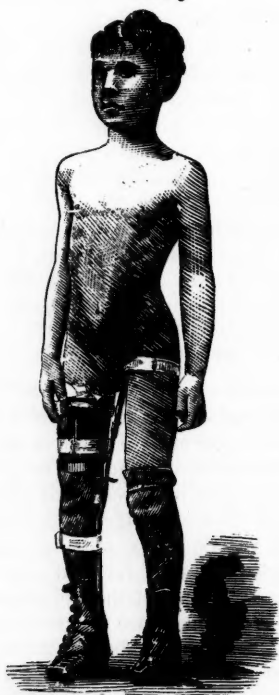
For severe and long-standing cases the patient is put to bed with the traction splint applied, and a ratchet crutch (shown in Fig. 1), pivoted to the inner knee-plate of the apparatus, is applied, by means of which a progressively modified abducting force can be applied to the thigh. Usually a few weeks in bed with the ratchet abduction crutch, the leg being in a sling and extra weight attached to the traction splint, will cause exceedingly obstinate and long-standing cases to yield, as has been practically demonstrated several scores of times. On getting up, if the hip still requires protection, the traction splint or Dows' is used according to the special indications presented, and the toggle-joint abduction crutch is added as a retaining appliance, when necessary, since the ratchet abduction crutch is not conveniently worn except during recumbency.

If no disease is present, the patient on getting up may or may not require retaining apparatus. If one is necessary to hold the thigh properly abducted for

ratus jointed at the knee and provided with a slip-joint at the ankle, the supporting bars being on the inside of the leg. Since it is not intended for hip protection, but merely as a retentive apparatus, with provision for knee protection, it has no perineal strap. It is secured by plaster to the inside of the thigh, as is the Dows', and has pivoted to the knee-joint the toggle abduction attachment. This leaves nothing to be desired as an abduction retainer, and as it can be worn indefinitely without discomfort, patient and surgeon are independent of time.

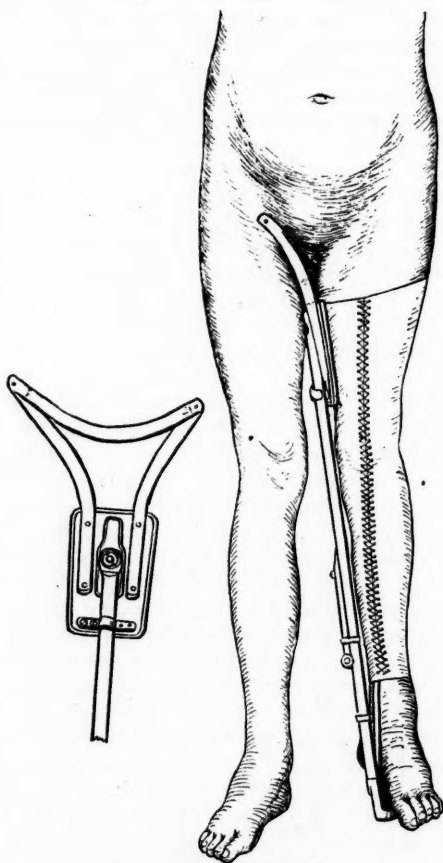
It would seem that the apparatus described, which have been in use more than a dozen years, met every indication in connection with the prevention and cure of the adducted position, but in dealing with a few particularly intractable cases, especially some

FIG. 3.



Median abduction splint.

a longer or shorter period, the jointed supporting splint with toggle-joint abducting attachment, but without horns or perineal strap, often answers the purpose, but a more efficient apparatus is the median abduction splint (Fig. 3). It consists of an appa-

FIG. 4.<sup>1</sup>

Long median abduction splint.

due to causes other than hip disease, such as fracture of the femoral neck, old dislocations of the hip, etc.,

<sup>1</sup> Shown at the meeting of the American Orthopaedic Association, New York, June, 1887, and described in the New York Medical Journal, November 19, 1887.



still more powerful means have been found desirable, and Dr. Taylor devised the long median abduction apparatus (Fig. 4). By means of this apparatus we can apply to the limb a very powerful, direct-acting abducting force, capable of exact regulation; and, after four years' experience in its use, I can report that from a few days to a few weeks have been sufficient to abduct the limb in the considerable number of cases in which I have used it. I relate a few cases illustrating the methods described.

CASE IX.—A stout boy of fifteen, recently discharged cured, had right hip disease at five years of age. He has had no disease for some time, but his treatment was prolonged by the strong and persistent adduction, which necessitated a week's stretching, two or three times repeated, with the long median abduction splint and the wearing of the jointed median splint as a retaining apparatus. The tendency to adduction was completely overcome, and the leg is now slightly abducted and flexed, with two inches shortening and a few degrees of motion. There never was an abscess; the boy's health is robust. He has left off all support and walks well.

CASE VIII., already related, came with a nearly stiff joint and about ten degrees of persistent adduction, which was observed after her long confinement in bed with the weight and pulley. The adduction was overcome by the use of the long traction splint, with abduction crutch worn in bed. She did well, but a year later the hip was still stiffer, and there was some recurrence of the adduction, which was overcome with the long median splint in about a week. On getting up she wore the Dows' splint with toggle abduction crutch, and was cured with ankylosis and perfect position (the limb slightly abducted).

CASE VI., already mentioned, is now under treatment for the adduction, although it is twenty years since her joint was cured. I applied the long traction splint with ratchet abduction crutch, and have attached adhesive plasters only above the knee, and in such a way that it is completely protected. The leg was quite resisting, but yielded to a few weeks' traction, and was thrown into abduction, so that I was able to remove three-fourths of an inch from the high shoe she was wearing. I am now making a jointed median retaining splint for her.

CASE X.—In a boy of thirteen, whose left hip was dislocated at birth, causing flexion and extreme adduction with great disability, complicated by extreme secondary rotary lateral curvature of the spine, I have been able to overcome the adduction whenever he took a few days in bed with the long median abduction splint. There has been difficulty in holding it owing to the lateral curvature, but the deformity has been greatly reduced.

CASE XI.—A lady of over fifty came recently with a severe senile coxitis with stiffness and over fifteen degrees permanent adduction. The deformity was overcome by a month's application of the long median abduction splint. There is also difficulty in this case, from special complications, in re-

taining the corrected position, and here, as in the preceding case, I still apply the long median traction splint at night, fastening it to the lower end of the supporting splint, with gratifying results.

CASE XII.—A girl of twenty applied at the N. Y. Orthopædic Dispensary and Hospital in 1874, walking on crutches, to which she had been confined ever since her trouble began. She had had left hip disease at ten, with very extensive abscesses, which discharged about two years. When seen in 1874 the thigh was extremely flexed, and Dr. Newton M. Shaffer, who remembers the case very well, says there was adduction and not much motion; the record is defective on these points. She was treated with the traction splint and in five weeks was able to walk about without her crutches; the shortening was two and a half inches. In a few months she left off the brace, but in 1877 suppuration recurred at the old site, lasting six months, and a supporting apparatus with abduction crutch was applied in 1878. She has been in the habit of reporting to us once or twice a year since then, and has been reluctant to give up her brace, though she has been well for many years. I took off the abduction piece two and a half years ago, and the entire brace six weeks ago. For over eleven years there has been no suppuration or sign of hip trouble. There is now extensive motion in every direction, no deformity, the thigh being slightly abducted; there is three inches shortening; she is in good health and walks readily without support and but moderate limp. This patient was shown at the meeting of the Section.

CASE XIII.—Girl, ten years old. Left hip disease at age of three. Came under treatment six months later and was one of those exceptional cases not readily relaxed by traction. Abscesses formed in Nov. 1884, and discharged for a year. Three years ago suppuration ceased and the patient has been free from active disease, in good health and walking nicely, but with rather persistent adduction, which has been treated with the median abduction splint (Fig. 3). This patient was exhibited to the Section to show the apparatus in action.

CASE XIV.—A gentleman reported in 1883 with an adduction of the right leg of thirty years' standing, from an injury to the hip. When seen the adduction amounted to about twenty degrees, and could not be diminished by manual force; together with the actual shortening it necessitated an extra sole three inches and three-quarters in thickness. The adduction was completely overcome in less than two weeks, the legs restored to vertical parallelism, and the sole reduced to one inch and three-quarters, which represented the actual shortening. Progression was rendered very much easier, and the patient did not complain of pain or fatigue as he had done. The position was easily maintained by the jointed median splint. The apparatus used in this case to overcome the deformity was the long traction splint with ratchet abduction attachment (Fig. 1).

There is a large field for brilliant results in old cases of joint disease or joint injury which have long

<sup>1</sup> Reported in the N. Y. Med. Journ., Nov. 19, 1887.

since been pronounced cured, but whose limbs have been left in such faulty position that they are deprived in great part of their legitimate use.

With the improved methods described, the distressing and disabling deformity of crural adduction has ceased to be, in the large majority of cases, the formidable matter that it has been, and I believe that where proper attention can be secured permanent adduction need never occur, and that when this condition has supervened it can be safely and quickly removed with scarcely any discomfort to the patient, and without resort to the knife or chisel in nearly all conditions except bony ankylosis.

Mr. Christopher Heath has said:<sup>1</sup> "Our duties in a case of fracture should be considered to end, not when the bone is found to be united, but only when the functions of the limb have been as far as possible restored." These words apply with ringing emphasis to the treatment of joint disease.

201 WEST FIFTY-FOURTH STREET.

#### AN UNUSUAL OSSEOUS GROWTH IN THE FALX CEREBRI.

BY HALDOR SNEVE, M.D.,

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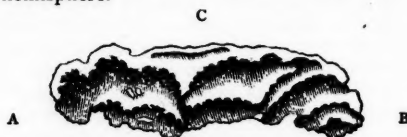
In making a post-mortem on a colored patient who died in this institution January 3, 1889, I found the anatomical curiosity described below.

The patient, Turner Graham, was admitted May 15, 1888, suffering with *mania* of one year's duration, æt. forty-five years, servant by occupation, very intemperate, of limited education, and unknown heredity. On entrance physical examination showed man to be of little above the medium height, somewhat emaciated, head well-formed for one of his race, old syphilitic cicatrices on legs, some consolidation at apex of left lung, heart sounds normal, slight cough and expectoration, and urine normal.

Patient emaciated rapidly, although he ate ravenously; cough and expectoration increased; and during the last few months of his life he had oedema of feet and ankles, although chemical and microscopical examination of the urine revealed nothing abnormal. He passed into *secondary dementia*, became filthy in his habits, and finally died of pulmonary tuberculosis, about eight months after admission.

**AUTOPSY.**—On removing calvaria, the bones of the skull were seen to be greatly thickened, measuring three-fourths of an inch at the occipital bone. *Dura mater* adherent to calvaria at its convexity, apparently healthy; considerable sub-dural fluid. *Pia mater* stripped readily from the convolutions. Brain very moist and unusually soft; section revealed no macroscopical evidences of disease. Passing my fingers along the great longitudinal fissure, they encountered a hard substance at its anterior part, enclosed within the falx cerebri; believing at first that what I felt was a calcareous deposit, I examined carefully all the vessels of the brain, but found no

calcareous matter in the walls of any of them. All the tissues surrounding the substance were next carefully examined but they all looked healthy, no adhesions or thickenings indicating a preëxisting inflammation. The bone (as it subsequently proved to be) was enclosed within two thin layers of the falx cerebri; its long axis parallel with the long axis of the latter, and following the general curve of the falx. The posterior extremity considerably elevated above its anterior. The anterior point of the bone was distant about one inch from the anterior point of the cerebral hemispheres, and occupied a position about midway between the upper and lower edges of the falx. The wood-cut below represents the exact size of the specimen, and shows its left surface, the elevations and depressions corresponding accurately to similar ones on the internal surface of the left hemisphere.



A, represents anterior point; B, the posterior; C, the upper edge; and D, the lower.

The falx supplied the place of periosteum. At its thickest part, the bone is 6.25 mm. in thickness. Weight is 1.2 gm.

Both surfaces of the specimen exceedingly rough, and traversed by furrows and depressions; the surface of the falx being finely granular.

A section of the bone showed the interior to be cancellated, Haversian spaces rather small, and bony spiculæ passing in different directions without any apparent regularity or arrangement.

A section of the thin layer of compact substance under the microscope shows lacunæ and Haversian canals as in adult human bone. This bone was undoubtedly developed in the falx and in all probability was congenital. Its rough, excavated appearance would seem to indicate that it was being slowly absorbed, and at one time probably was of larger size. That it had any connection with or influence on the patient's insanity, is highly improbable. In the literature at my disposal, I can find no record of a similar osseous growth occurring in the falx.

#### REPORTS OF SEVERAL CASES OF ANGIO-NEUROTIC OEDEMA.<sup>1</sup>

BY ALLEN J. SMITH, M.D.,

ASSISTANT DEMONSTRATOR OF PATHOLOGY IN THE UNIVERSITY OF PENNA.

THE literature of this peculiar condition is singularly meagre, and in searching the journals and works within my reach I have been unable to find any other references than those detailed in the paper presented to this Society some months ago by Dr. William Osler, upon an hereditary form of the disease. Pre-

<sup>1</sup> Minor Surgery, p. 297, 8th edition.

<sup>1</sup> Read before the Philadelphia Neurological Society, January 29, 1889.

senting much the general characteristics of an extensive form of urticaria, and in its general aspect resembling this affection in most particulars, it has, by a number of writers, been referred to similar, but more extended, anatomical changes of structure in the papillary layer of the skin, with some neurotic etiological factor at the basis. This view, accepted by most dermatologists in the case of the urticarial wheals, includes an inflammatory condition. There is supposed to occur first a hyperæmia of the capillary vessels of the papilla, followed by the escape of a proportion of the white blood-corpuscles and serum from the vascular lumina, and grouping of these elements about the vessel walls, with gradual occlusion. In this manner the papilla is enlarged enormously, the blood is excluded from its structure; and macroscopically it shows itself as a white, bloodless papule, about whose base is a zone of hyperæmia, and covered by an epidermis shining and stretched from pressure from beneath. Section of the papular eruption in rabbits caused by the irritation of nettles, according to Neumann, confirms this view, and shows, moreover, a similar condition of the lymphatic tracts, the lymph corpuscles banked about the narrowed vessel, and aiding in the general swelling of the part. A number of such papillary swellings coalesce to the formation of a wheal, and the general mechanism is extended to explain the more widely swollen areas in this condition of acute, circumscribed oedema.

That such a condition, at times, does obtain is quite probable. The following case was seen some months ago in the southwestern district of the Philadelphia Dispensary:

A young woman asked relief for a recurring oedema of her face about the nose and eyes. Five years previously she had had a severe facial erysipelas, and since then each year at some time during the cold months, and each time preceded or associated with an acute nasal catarrhal inflammation, the tissues about the nose and eyes became swollen into deformity. The attack in which I saw her was the fourth. There was not the usual pitting upon pressure, the swelling being limited to the dermal structure and invading the subcutaneous cellular tissue; there was no pain, and no discomfort save the marked itching at times, which was readily allayed by sedative applications, as carbolized solutions. The skin was tense and shining, and the whole swollen area of the ordinary waxy hue of oedema. These attacks lasted for several days each, and disappeared as rapidly as they appeared. The nasal catarrh, however, was not especially influenced by the disappearance of the oedema, and each time continued for some days or weeks longer. No other parts of the body were in any way affected, and had not been in any of the attacks, and the disturbance was distinctly localized to the parts described.

In such a case, in which little or no neurotic element can be called in as an etiological factor, the

whole process is explained by the ready extension of the nasal and conjunctival trouble to the adjacent dermal structures, whose power of resistance had suffered distinct shock, and probable deterioration, in the erysipelatous attack years before; except possibly the rapid and complete disappearance of the results of the process before the cessation of the inflammation from the primary site in the nasal mucous membrane. This might, however, be accounted for by a continuation of the catarrh for a longer time than the dermal symptoms because of the irritation from the passage of air and irritants over the inflamed membrane, the dermal being both of a slighter character and being more protected from agencies which would cause its continuation.

Another instance more closely connected with the subject in hand, perhaps, occurred in the case of a woman about the period of the menopause, with marked neurotic tendencies, during my service as a district physician in the above-named dispensary.

This woman first called medical aid for the relief of symptoms of muscular rheumatism, which yielded readily to salicylates. Following the administration of this drug some days, an attack of gastritis set in, and for a number of weeks the ingestion of any heavy food, or of fish, or certain vegetables, was invariably followed by a widespread eruption of urticaria, lasting for a few hours and then disappearing without further care. In several of these attacks there was associated facial swelling, especially marked about the eyes and cheeks, of transient duration, and only noticed because of its disfigurement and the persistent itching sensations attending both this uniform swelling and the more discrete papular and wheal-like eruption over the rest of the body. The swelling here was not so marked as in the first case, and presented to the touch a hard, firm sensation directly in the dermal tissues and not beneath. The surface here was not so completely bloodless as in the ordinary urticarial eruptions, but presented a somewhat mottled appearance—suggesting the probable method of origin from coalescence of a number of the larger wheals. These swellings ordinarily lasted a less time than the wheals elsewhere on the patient's person, and after leaving there remained for a time a slight burning sensation, and the parts became flushed. There was no renal disease noted from the urinary examination; and the only other symptom noted at the time was the passage of bright blood occasionally from the intestines. The origin of this was probably hemorrhoidal, but on account of the refusal of the woman no examination could be made.

To this same class in which are associated inflammatory conditions, might, with propriety, be relegated the case of a young man, a druggist, who incidentally mentioned the fact that at the outbreak of every cold—especially nasal—his under lip and the lobe of the left ear invariably became swollen, hot, and uncomfortable—lasting for a few hours or a day and then disappearing. The swelling is spe-



cially marked in the lip on the same side as the ear, and the relation between these two foci of oedema and the catarrhal inflammation probably depends to some extent upon the distribution of branches of the facial and auricular nerves, or the fifth nerve.

Whether this condition of an extension of some inflammatory influence—perhaps latent to outward observation—is invariably present in cases of acute circumscribed oedema is questionable; and unless, as suggested by this last case, this inflammatory influence be usually transferred through nervous activity, or a secondary focus of hyperæmia with resultant oedema be produced by nervous reflex, another condition must be invoked for further explanation. The fact that in the ordinary cases of this affection, whether marked by hereditary taint or not, the symptoms almost always follow the ingestion of some substance of indigestible nature would suggest the first idea, although it would not preclude the possibility of some other result than an inflammatory one from the nervous reflex from the focus of irritation.

The following case strongly suggests the possibility of this condition, consisting of a non-inflammatory origin and course throughout, depending upon the association of an hereditary tendency and general malnutrition as strongly predisposing causes and the occurrence of some unobserved exciting agency—in one instance ascribed by the patient to a psychical or moral agency.

The patient at the time of the first attack was about sixteen or eighteen years of age, in poor general health, anæmic and tending toward chlorosis. The attacks recurred without apparent cause or warning several times a year until she was twenty-two years old, a short while before marriage. The swelling was usually confined to the face, but on several occasions one or both arms partook in the process. Preceding the swelling there was a marked itching from urticaria, which, however, always disappeared before the oedema reached its maximum. There were no painful symptoms manifest, the only discomfort arising from the feeling of fulness and tenseness of the parts. The duration of the attacks varied from a few hours to a day. In no way could indiscretions in diet be associated causatively with the attack. At the time of the last attack she was placed in the hands of one of the physicians of the University, who recognized the influence of the underlying chlorotic dyscrasia, placed her upon a ferruginous treatment and a carefully systematized mode of life, following which there resulted an almost immediate general improvement and since which there has been no recurrence of the oedema.

Shortly after she married, and in the four years of her married life she has borne three children, the older two healthy and robust, the third more or less sickly; has had a miscarriage last January and is now pregnant a fifth time. Notwithstanding the notable drain upon her system from prolific childbirth in the history she has given, her health has steadily im-

proved. At present she is a well-nourished and well-developed woman, of slight stature, medium clear complexion, nervous temperament and apparently strong constitution. The father of this woman, a small, compactly built man, also neurotic, in early middle life had been subject to the same peculiar affection, manifesting itself in a similar manner. No record of further hereditary taint could be obtained; and the children of my patient are entirely without symptoms of a like nature.

It is entirely improbable that sufficient inflammatory action should be aroused to give rise to such marked and general symptoms without undoubted evidence of its presence; and the apparently causeless nature of the malady, the absence of digestive symptoms, would suggest a central and wide-reaching influence in their production. As an explanation of these phenomena, the occurrence of another instance which I shall presently narrate, has suggested the possibility of the existence of an acute lymphangioma, depending upon disturbances of the lymphatic vasomotor nervous influences. The proof of such a theory I acknowledge I cannot offer, but the appearances of the following case seem to agree with the supposition, and it is not impossible that others of the cases may be accounted for by the hypothesis.

Miss M., aged twenty-five years, one day in the early part of last November, while walking in the street, felt a peculiar stinging sensation throughout the right side of her body, and before she could reach her home, some squares distant, began to swell uniformly over this part of her person. The evening before she had eaten raw chestnuts and had had celery at her dinner. She was born with a large birth-mark over her entire right side; and this side has always been rather below the left in condition of nourishment, the limb and arm smaller and very slightly shorter, the mammary gland smaller, and the whole side more apt to become cold upon exposure or to feel fatigued upon exercise. The first attack occurred two years ago, and the one in which I found her was the third or fourth since then. The entire right side was swollen to marked disfigurement, the eye almost closed, and the mouth drawn because of the swelling to the affected side. The arm and limb were both markedly enlarged, and the whole surface hard and smooth, with no irregularities of swelling. The color was that which would be given by a thin coating of white powder over a dusky red. There was no heat in the swollen parts and no pitting upon pressure. There was no pain from the swelling, but during the attack several times she complained of slight colicky pains; the only sensation over the affected part was one of tenseness and fulness, with occasionally some itching. This condition lasted several days, and then gradually disappeared.

Examination of a bit of the fluid which came from pricking the swollen part, showed it to contain a large proportion of leucocytes, and the rest was clear serum; the urine during the attack presented no special peculiarities under the microscope or

upon a routine chemical examination. The tongue appeared slightly swollen, but no unilateral anomaly could be detected in the coating or color. The case has no hereditary history, has always enjoyed fair health until the last few years, since when she has grown to be regarded as delicate. Within the last three years she has twice fainted—both times in church—and has shown a number of hysterical traits.

This last case would suggest, from the color of the affected portions and from the absence of heat, the probability of the presence of another factor than one of a simply intensified angioma of the affected side. The absence of pitting on pressure and the rapidity of disappearance would appear to preclude the idea of serous cellular effusion (of inflammatory origin) with subsequent resorption, and the general conformity of the swollen portions with the angiomatous area of the right side would suggest a possibility of a similar condition of the lymph-vessels, due perhaps to the same altered innervation. Such an hypothesis, too, could, without undue strain, be brought to bear on the case of hereditary tendency, in whom there was no irritant cause apparent whatever; and it might with equal propriety, too, be extended to the case of oedema of the lip and lobe of the ear.

Fully appreciating the weak points in this train of arguments I have outlined, and unable from evident reasons to verify or deny my position, I would suggest as the outcome of such a set of instances the two provisional classes of acute circumscribed oedema:

a. Inflammatory—depending upon actual inflammatory processes in the papillary layer of the skin.

b. Neurotic—depending rather upon an angiomatous condition of the lymph-vessels of the corium due to alteration in nervous supply. To this latter variety might be applied, for the purpose of clearer definition, the term acute neurotic lymphangioma.

In the actual matter of treatment, too, there may a clearer line of separation be drawn between these two classes, the former depending largely for its alleviation upon local measures, the latter demanding general medication directed toward the removal of the systemic fault which is almost certainly present.

## HOSPITAL NOTES.

### INFIRMARY FOR NERVOUS DISEASES, PHILADELPHIA.

#### TREATMENT OF ATAXIA BY SUSPENSION.

THE method of Motchonowsky, of Odessa, introduced in 1883 for the treatment of tabes, and recently revived by Charcot, has been actively carried out in this institution for the past five weeks. In all, fourteen cases are under treatment. The method employed is practically identical with that recommended by Charcot, and con-

sists in the suspension of the patient by the head and armpits for from two to three minutes. The Sayre apparatus can be used, or, what is equally convenient, the suspension made by means of pulleys arranged over a horizontal iron bar.

As a rule, the suspension is well borne. Care must be taken to have the pressure equable; not more in the neck than in the armpits. The slings beneath the arms need to be well padded and pushed well in; otherwise the pressure on the brachial plexus is unpleasant, and causes numbness.

Patients, after the suspension is over, are not released for a minute or so, as it is found that they are unsteady at first when let down.

The only unpleasant effect was in a patient who fainted during suspension and had convulsive movements; he recovered in a few minutes after being let down.

It is too early to speak as yet of the results obtained. There has not yet been in any case striking improvement.

## MEDICAL PROGRESS.

*The Treatment of Locomotor Ataxia by Suspension.*—PROF. CHARCOT gives the following technical details, suggested by an experience acquired in the course of over 800 suspensions, practised under the supervision of his chief assistant, in the cases of forty patients. For, though the operation is in itself very simple indeed, it yet requires a certain skill that is more easily acquired with the assistance of definite rules, than by the sole experience of entirely original experiments.

The apparatus used is that contrived by Sayre, of New York, for the application of plaster jackets used in cases of spinal deviation. Though pretty extensively known, we shall give a short description of the form of it used in Professor Charcot's *clinique*. A transverse piece of iron, about eighteen inches in length, is suspended by means of a central ring to the pulleys which are used to lift the patient from the ground. Each extremity of the bar ends in a hook, intended to support the ring, which carries the straps intended to give support under the armpits. Several notches on the upper aspect of the bar serve to fix the rings from which hangs the head-piece. The latter consists mainly of two broad strips of leather, elongated oval in shape, moulded to receive the chin and the occiput respectively. These are connected above with the rings just mentioned, and are held in position by means of a strap sewn to the posterior flap, and fixed to buckles carried by the chin-piece, so as to hold the head-support in place when the patient is suspended. (Fig. 1.)

Much depends upon this strap, which must be tightened enough to prevent any slipping, and yet not sufficiently to cause compression of the bloodvessels of the neck, and thereby unpleasant head symptoms. It must be provided with a sufficient number of holes to accommodate itself to the varying thickness of the neck among those to be suspended. In case of need, which is not often, a soft body, such as lint or cotton-wool, may be inserted so as to prevent undue pressure of the strap or broad pieces upon the skin. It is necessary to exercise much care in fitting the head-piece and padding, so as to suit the peculiarities of each subject. The size of the head determines the notches into which the rings of the

head-piece are to be fixed; the larger the head the wider apart they must be, of course.

FIG. 1.



When the head is duly disposed of, the shoulder-pieces are slipped under the armpits. Though they may appear of minor importance, they really play the part of regulators during the period of suspension. For it is necessary that whilst lifted off the ground the patient should not be entirely supported by the head-piece, for then the traction would become, in some cases at least, absolutely intolerable. But though the weight of the body must be distributed upon other points, this additional support must not be so effectual as to prevent as complete an extension of the spinal column as possible.

FIG. 2.



The shoulder-pieces consist of elongated cylindrical padded cushions, terminating in straps provided with a series of holes so as to suit, by appropriate lengthening or shortening, the requirements of each patient. (Fig. 2.)

This adaptation is very important; for if too short, the shoulder-pieces exercise such a pressure upon the axillary vessels and nerves as to compel the operator to bring the suspension to an abrupt and premature termination. If, on the other hand, they are too long, the traction on the structures of the neck may become too painful to be tolerated, and interfere likewise with the treatment.

Careful trials are necessary to determine the exact length of the several straps; but after three or four operations it becomes easy to decide the arrangement suitable for each case.

When all is ready, the physician orders his assistant—with some practice he may do without one—to apply traction upon the cord, very gently and slowly, so as to avoid jerks, and to accustom gradually the muscles and ligaments to the unusual tension to which they are going to be submitted. The patient is to be cautioned not to make any movements whatever whilst he feels himself being lifted off the ground, for they would give rise to unpleasant lateral and rotatory displacements. (Fig. 3.)

FIG. 3.



As soon as the toes cease to touch the floor, the operator holds the patient lightly, so as to check any oscillation or torsion of the cords, and carefully watches the number of seconds that elapse, so as to regulate minutely the length of each suspension. During this period the patient is made, at intervals of fifteen or twenty seconds, to raise his arms laterally away from the body, so as to transfer more weight upon the head-piece, and so render the traction upon, and elongation of, the vertebral column still



more complete, as complete as is tolerated by each individual. Much care and vigilance are to be bestowed upon the proper performance of these abductions of the arms, both by patient and physician. As a rule, the longest time of suspension must not go beyond four minutes, three minutes being taken as the average duration. Half a minute is enough at the outset, the maximum being gradually reached during the first six or eight applications of the treatment.

Here again it is essential to take into account certain individual susceptibilities or physical peculiarities, among which stands foremost the body-weight of the patient; for whilst a person weighing from about 130 to 150 pounds may be suspended forthwith during two minutes or more, the case is quite different in the case of those whose weight reaches 180 pounds or more. In the latter, the tension to which the structures of the neck are subjected may become very severe and painful, and be felt sometimes for a whole day afterward—an occurrence which must be avoided if the treatment is to be correctly carried out.

It is well to note that certain patients have such a wish—a very natural wish—to get better, that they think themselves bound to stand any amount of pain without complaining; but this circumstance is positively detrimental to the success of the treatment, which must be accompanied with but trifling discomfort at the most, without real pain or fatigue, lest it should defeat its own ends.

The maximum length of the suspension must, therefore, be suited to the requirements of each patient; it is obvious that in the case of heavy persons the effect on the spine must be very thorough and effective, owing to the greater traction to which it is subjected. Suspension must not be carried out oftener than once on alternate days, otherwise it may become more hurtful than beneficial. The time of the day is indifferent, but regularity in the operations is to be observed.

When the full time has elapsed, the operator very gradually lets the rope loose, so as to avoid every trace of jerking during the descent. The patient is to be supported whilst being freed from the apparatus, and made to rest awhile in an armchair brought near for the purpose.

The patient, before the operation, should divest himself from his coat, so as to give freedom to the arms, and his neck must be free from any pressure from the collar, so as to avoid any trouble or discomfort from compression about the neck. Sayre's original apparatus usually comprises a movable tripod, to the top of which the upper pulleys are fastened by means of a hook. This tripod is not to be used for suspending ataxics, who, being often deficient in power to sustain their equilibrium, are apt to seize convulsively its legs in order to steady themselves, and in so doing would knock down the whole apparatus, and injure themselves and the bystanders. As shown in the figure, the suspensory apparatus must be fixed to an iron ring firmly screwed in the ceiling.

The results obtained by Professors Eulenberg and Mendel at the Berlin Clinic for Nervous Disease in the cases of twenty ataxics, fully confirm, so far as can be judged from the comparatively recent introduction of the new treatment, the encouraging outlook sketched out in Professor Charcot's communications. The improvement observed bears chiefly upon the walking power, the equilibrium, the lightning pains, and, in a few cases, the bladder troubles. Moreover, no bad symptom whatever has been observed, even in the case of the female patients

who are undergoing the regular course of suspensions. At the same time, the most sanguine observer must acknowledge that it is entirely premature to come to any definite conclusions upon a point of such deep perplexity as the question of the possibility of absolute cure of locomotor ataxia. Physicians and patients alike must beware from falling into the temptation of conceiving exaggerated hopes as to the final results, in the presence even of effects as incontrovertible as those testified by so many able and critical observers.—*British Med. Journal*, March 9, 1889.

**Acetic Acid in Gynecology.**—The *Gazette de Gynécologie* states that solutions of acetic acid are as antiseptic as solutions of carbolic acid; the solutions are inoffensive, never producing any phenomena of poisoning, and are besides somewhat hæmostatic. Apart from this, acetic acid possesses the property of impregnating the tissues with a greater facility than other antiseptics; it has thus an advantage over sublimate, which latter, in the presence of albumin, produces insoluble compounds. Acetic acid injures instruments to a less degree than does sublimate; a pair of forceps can with safety remain fifteen minutes in a three per cent. acetic acid solution without being damaged. As soap is insoluble in acetic acid, one would have to wash his hands several times after handling the acid, an operation which is somewhat annoying. For ordinary antiseptic washings a three per cent. solution will suffice, while for cases of septicæmia a five per cent. solution is required.—*Revue de Thérapeutique*, March 1, 1889.

**Treatment of Carbuncle by Iodoform.**—MR. WHITEHEAD, of Manchester, has successfully treated three cases of carbuncle, by the subcutaneous injection into the base of the tumor of a concentrated ethereal solution of iodoform. In each instance a momentary burning pain was experienced by the patient, but this was immediately followed by permanent relief from suffering. On the second day the induration and redness had subsided, and the central slough was dry and withered. Within a week all traces of the disease had disappeared, with the exception of a dry superficial dark scaly scab, which eventually separated without leaving any conspicuous indication where the carbuncle had been.—*British Med. Journal*, March 2, 1889.

**Chorea and Antipyrin.**—DR. JULES SIMON states in the *Revue de Thérapeutique*, March 1, 1889, that antipyrin is the drug which has given him the best results in the treatment of chorea. He begins with the administration of eight grains, which quantity is increased every twenty-four hours by eight grains until he reaches the daily dose of sixty grains; this quantity suffices for children between the ages of fourteen and fifteen years. The mode of treatment is well borne, the author having only occasionally seen such symptoms as swelling of the face, scarlatinoid eruption or general fatigue follow the administration of the drug. But even these few annoying symptoms can be avoided if the drug be given in eight grain doses and at divided intervals during the twenty-four hours. The taking of some liquid after each dose will prevent gastric disturbances.

**Aneurism and Epilepsy.**—At the recent meeting of the local branch of the British Medical Association, one of

the most interesting demonstrations was that by Dr. Macewen. He showed, first, a man who had been subject to epileptic seizures for many years. A year ago Dr. Macewen removed a tumor from the cerebrum, with the result that the seizures have entirely ceased. The second subject demonstrated was a new method for the cure of aneurism, in which the object of the surgeon is to produce in the cavity, not blood-clot, but a "white thrombus" of connective tissue. This is accomplished by passing needles into the aneurism in such a way as to pass through one wall of the sac and just to touch the lining of the opposite wall; the current of blood causes an oscillation of the needle and a number of fine scratches on the inner surface of the endothelium, irritating it slightly and leading to the proliferation of leucocytes. From these connective tissue is formed, and a white fibrous mass develops on the inner surface of the sac. The irritation is repeated at interval of days, the needle being introduced at different spots. The result is the formation of a strong layer of connective tissue, which is firmer than red clot, and involves no danger from embolism.—*Lancet*, March 2, 1889.

**Chloroform in the Treatment of Dyspepsia.**—Chloroform administered in the various forms of dyspepsia overcomes fermentation and flatulence; it is best given in the following formulas:

1. *Method of DR. WILS.*—From ten to twenty drops of chloroform, to be taken in a few spoonfuls of sweetened water, in flatulent dyspepsia. After a few minutes eructations occur, followed by improvement.

2. *Method of DR. HUCHARD.*—Administer before each meal one dessertspoonful of the following:

R.—Chloroform water . . .	150 parts.
Mint water . . . . .	30 "
Water . . . . .	120 " —M.

Or, from eight to ten drops of the following mixture in a wineglass of water:

R.—Tincture of nuc. vomica	} aa 3j.
Tincture of gentian	
Tincture of anise	
Chloroform . . . . .	gtt. xx-xl.—M.

An appropriate diet and oxygenated waters at meal-times form part of this treatment.

3. *Methods of DRS. REGNAULT and LASÈQUE.*—This treatment applies particularly to painful dyspepsias with dilatation of the stomach:

R.—Chloroform water . . .	150 parts.
Orange-flower water . . .	50 "
Water . . . . .	100 " —M.

One dessertspoonful to be taken, at intervals of fifteen minutes, until the pain ceases.

Or the following for the same affections:

R.—Chloroform water . . .	150 parts.
Tincture of anise . . . .	5 "
Water . . . . .	145 " —M.

—*Revue gén. de Clin. et de Thérap.*, February 28, 1889.

**Resection of a Portion of the Ileum.**—DR. FREDRICO RUBIA, of Madrid, recently communicated to the Spanish Royal Academy of Medicine an interesting case in which he performed successfully a somewhat extensive resec-

tion of the gut in the wards of the Instituto de Terapéutica Operatoria of Madrid. The patient was a woman of thirty-two years of age, who, after eating a quantity of cooked vegetables, was seized with violent abdominal pain, a swelling appearing at the same time in the right groin. Vomiting and constipation followed. Subsequently the tumor in the groin became inflamed and opened in two places, viz., at the external inguinal ring and at the lower part of the right labium. From these fistulous openings feces kept continually escaping, rendering the patient's condition most deplorable. Attempts were made during many months to get these openings to close up, but, although temporary improvement followed some of the means used, it ultimately became evident that unless some radical operation was resorted to the patient must necessarily succumb. Having given purgatives and enemata to empty the bowels, and a disinfecting bath to cleanse the surface, Dr. Rubia performed laparotomy, making a small incision in the spot usually selected for the ligature of the external iliac. This brought into view the cæcum with the vermiform appendix. He then hooked up the coils of the ileum one after another; the third of these presented an opening with fungiform edges, three centimetres and a half in length by two centimetres and a half in breadth, and surrounded by a very unhealthy-looking area—which, indeed, occupied the whole circumference of the gut. Under these circumstances, it was felt that any attempt to close the opening would assuredly end in failure, and that the only alternative was to excise a portion of the gut. About eight centimetres were consequently excised, together with a V-shaped piece of the mesentery; catgut sutures were applied, and the patient made a good recovery, normal defecation taking place on the second day after the operation.—*Lancet*, March 2, 1889.

**Pernanganate of Potassium in Amenorrhœa and Dysmenorrhœa.**—DR. J. M. LWOW (*Medycynsk. oboszczenie*, 1888, No. 19. *Wratch*, No. 6) divides his 187 cases affected with these disorders into five groups: 1. Young girls, somewhat chlorotic, but otherwise healthy, who complain of severe pain during menstruation and of diminution of the amount of the flow, 32 cases. All were rapidly cured by taking from four to six grains of permanganate of potassium in extract of pulsatilla shortly before the period of menstruation. 2. Women suffering from extreme involution of the uterus after birth, or from atrophy of the uterus and ovaries, 17 cases. (With most of these patients two years had passed since they last borne children.) Permanganate of potassium taken in the same doses from three to six months without interruption, reëstablished already, in four or six weeks, the menstrual functions, which remained regular provided the drug was continued. 3. Slow involution of the puerperal uterus in connection with old, inflammatory processes of the uterus and its appendages, with slight but very painful menstruation, 62 cases. Here the results were also satisfactory, although some cases proved unsuccessful—namely, those in which puerperal illness had left irreparable changes. 4. Blennorrhœa of the vagina and uterus, 65 cases. In these cases the drug, though continued for some time, had no effect whatever. 5. Women in whom menstruation had begun too early and ceased between the ages of thirty-five and forty, 11 cases. No results.—*Therapeutische Monatshefte*, February, 1889.

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## RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE STOMACH.

THE process of taking stock, of finding out the exact amount and nature of our possessions, is at least as valuable in the mental as in the physical world. In a paper read before the Medical Society of Munich, on December 4, 1888, STINTZING has done this important work for the department of diseases of the stomach. After a critical examination of the various methods of testing the functional capacities of this viscus, he propounds the only question of interest to practical physicians: What have they taught us? In the first place, as he tells us, we have learned the paramount importance of hydrochloric acid in the act of digestion. It is not so long since pepsin was regarded as the panacea of every gastric trouble, whereas we are now well aware that in the gradual disappearance of the digestive agents pepsin never takes precedence of hydrochloric acid. We have learned to recognize the two extremes of anacidity and hyperacidity, and for a time were inclined, in accordance with the researches of von den Velden and Riegel, to regard the former as pathognomonic of carcinoma. Although we are now aware that hydrochloric acid may be absent in other morbid conditions, such as dilatation without carcinoma, motor insufficiency, chronic catarrh, and atrophy of the mucous membrane, yet its absence in carcinoma is a diagnostic point of the greatest importance. For example, the differential diagnosis between simple ulcer and carcinoma is now rendered a comparatively easy

matter, since hydrochloric acid is never absent in the former disease. On the other hand, Stintzing declares that he has never found it in carcinoma, but does not state in how many cases of this disease he has tested the gastric secretions.

The symptom called pyrosis has long been recognized as due to hyperacidity, although the nature of the acid or acids causing it was, until recently, unknown. It is now established that there are two varieties of pyrosis, one depending upon an excessive secretion of hydrochloric acid, the other upon organic acids caused by abnormal fermentations. For the former, Sticker has proposed the term *pyrosis hydrochlorica*. Hyperacidity is a frequent though not an invariable accompaniment of gastric ulcer.

The new methods of research have enabled us to distinguish from hyperacidity a condition of hypersecretion, by which is meant the secretion of gastric juice by a fasting stomach. This condition is by no means fanciful, but is a well-recognized and serious pathological aberration. According to Riegel, there may be withdrawn from a hypersecreting stomach during a fasting interval as much as a pint of acid fluid capable of digesting albumen. The causes of this condition, which was discussed in THE MEDICAL NEWS, October 1, 1887, are not fully known, although it is probable that they often have their origin in the nervous system. In support of this view, it may be mentioned that Sahli has observed a hypersecretion of gastric juice during the gastric crises of a tabetic patient. The condition of hypersecretion may, therefore, be either transient or permanent, and in the latter event is generally associated with dilatation. In the first thirty to forty-five minutes of digestion the acidity of the gastric juice is caused by lactic acid. If this acid appears in later stages of the process, its presence is caused by undue detention of food or by deficiency of hydrochloric acid. The tests for lactic acid are, therefore, of importance in the diagnosis of diseases of the stomach.

Studies of the milk-curdling ferment, the *labferment* of the Germans, have lately been instituted by Johnson, Klemperer, and Boas, and the latter has shown that as pepsin is preceded by propepsin, so is the labferment by labzymogen. The latter is developed into the former, and acquires its milk-curdling property by the action of hydrochloric acid. Labferment is always present in the stomach, except in high degrees of atrophy, and even in these its forerunner, labzymogen, may be found. The diagnostic value of the absence of this ferment is no greater



than that of hydrochloric acid, on the action of which, as already stated, it depends for its existence.

The absorbent power of the stomach may be tested with iodide of potassium, which was first employed for this diagnostic purpose by Penzoldt and Faber in 1882. Three grains of iodide of potassium are given in a gelatine capsule, and the saliva which has been previously shown to be free from iodine is tested for this substance. If the stomach is healthy and empty, the first iodine reaction appears in from six and one-half minutes to eleven minutes. If the capsule be swallowed immediately after a meal, the reaction does not appear until from twenty to thirty-seven minutes have elapsed. According to Stintzing, it may not appear, under these circumstances, until forty-five minutes after the capsule has been swallowed. In dilatation of the stomach, in cancer, ulcer, and chronic catarrh the absorbent power of the stomach has been shown by this test to be diminished.

The digestive and absorbent powers of the stomach having been tested, the examination is completed by ascertaining its motor ability. Until quite lately, the only means of determining this point was based upon the fact that a healthy stomach has discharged its contents into the intestine seven hours after a meal. It the stomach was proved to have emptied itself in that time, its motor function was assumed to be normal. Such a method, however, gave no reply to the question whether the gastric peristalsis had begun at the proper time. Quite recently a drug was discovered, or, rather, invented, the chemical properties of which rendered it singularly valuable as a test of the motor function of the stomach. This drug, which is salol, is insoluble in the acid secretions of the stomach, but dissolves in the alkaline fluids of the small intestine, in which it breaks up into its component parts, phenol and salicylic acid. The latter is excreted with the urine, in which it may be recognized by testing with chloride of iron. In health, according to Ewald, this reaction may be obtained in from thirty minutes to one hour after the ingestion of fifteen grains of salol; whereas, in cases of gastric dilatation the reaction, as a rule, does not appear until from ninety minutes to three hours after the same dose. These figures, of course, include the time occupied by the stomach in propelling the salol into the duodenum plus that necessary for the salol to be decomposed, absorbed by the portal vessels, pass the barrier of the liver, enter the general circulation, and be excreted by the kidneys.

Ewald and Sievers, by experimenting in a case in which colotomy had been performed, determined this latter period to be between twenty and thirty minutes. By subtracting these sums from the average time in which the urine reaction is obtained, viz., forty-five minutes, it would appear that the time necessary for the healthy stomach to expel a dose of salol into the intestine is from fifteen to twenty-five minutes.

This salol test can scarcely be called clinical, for, apart from the delicate nature of the urine test, which is a part of it, it is impossible for most individuals to pass their urine at intervals sufficiently short for the object in view. On these accounts Stintzing has attempted to apply the test for iodine in the saliva to the determination of the motor function of the stomach. He administered iodide of potassium in keratin pills—which are, theoretically, insoluble in the stomach—and tested the saliva, at intervals, for iodine, just as is done in testing the absorbent function. At the first experiment, the iodine reaction appeared in exactly the same time as the salicylic acid reaction in the urine after the ingestion of salol. Stintzing, however, conceived the happy idea of examining the stomach contents for iodine, and found it present. It might have been swallowed, and, therefore, in a second experiment, as soon as the first traces of iodine appeared in the saliva he withdrew the stomach contents and found the iodine reaction to be much stronger in them than in the saliva. The method is, therefore, inapplicable to the object in view, and the experiment demonstrates that, as already suspected, keratin pills are not insoluble in the stomach.

The latest test of the motor power of the stomach is that just presented by Klemperer. This experimenter introduces into the empty stomach 26 drachms of olive oil, and after a certain time washes out what is left in the viscus. The deficit determines the motor capacity. Under normal circumstances, the stomach discharges from 18 to 21 drachms of the ingested oil into the duodenum in two hours. In cases of chronic catarrh only from 6 to 11 drachms out of the 26 were emptied in the same time, and in a case of atrophy only 6½ drachms. Supposing it possible to wash out all the ingested oil, Klemperer's test is the most accurate yet employed, but the question arises whether the behavior of the stomach toward a quantity of oil so great as virtually to constitute a foreign body, is the same as toward the ordinary nutritious substances.

The difficulties in the way of the general clinical use of this test are also, it is needless to say, insuperable.

The most important results of modern gastrological research have now been enumerated, and it must be admitted that the array of precise therapeutic indications which they furnish is unequalled in any other department of medicine. Nearly forty years ago one of the greatest clinicians of Germany gave utterance to almost hopeless views concerning future progress in the knowledge of diseases of digestion. Through the methods above outlined, and especially through the use of the sound, this pessimism of Frerichs has been shown to be without real foundation.

#### ACCIDENTAL DEATHS AMONG INFANTS.

INFANT mortality by accident and negligence is a marked figure in English statistics, especially in regard to the deaths of male infants. The annual summary of the Registrar-General for the year 1887 makes it clear that not only neglect in regard to infant life prevails, but that there is a ruthless sacrifice of it worthy of the days of Herod. In London more than half of all accidental deaths among males falls upon children under five years; among females, over three-tenths. For all England, one-fourth of all deaths by accident among males falls upon those under five, and among females about the same proportion. But totals being next considered, there are nearly twice as many males as females registered as dying in this class, thus: males, all ages, 11,103 deaths; females, 4415; total, both sexes, 15,518. Under five, males, 2150; females, 1712; total accidental infant mortality being 3862.

The excessive loss of infant males in London and some other large cities has been studied and theorized upon not a little, but a satisfactory explanation of its causation has not yet been found. In it is one of those unsolved problems that stand up to challenge the efforts of the humane and philanthropic for the reduction of violent causes and for an increased watchfulness and care for infant life.

At their recent annual commencements, the degree of Doctor of Medicine was conferred by the respective institutions as follows: University of Louisville, 129; Medical College of Ohio, Cincinnati, 85; Long Island College Hospital, 47; Woman's Hospital Medical College, Philadelphia, 36; Miami Medical College, Cincinnati, 22; Baltimore

Medical College, 21; Michigan College of Medicine and Surgery, 11.

THE collections in New York City for the Hospital Saturday and Sunday Fund amount to \$51,250, a slight increase over the total for last year, when \$50,500 were received.

At the dinner of the Alumni of the Long Island College Hospital, on March 13th, an agreeable surprise interrupted the feast, in the shape of the presentation of a check for \$10,000 in aid of the work of the Hoagland Laboratory. The donor, the venerable Dr. Daniel Ayres, has been all his life long a diligent pathologist, and has reason to know the advantages of a fully equipped laboratory.

THE University of Vermont has given expression to the growing appreciation of the medical relations of life insurance by the origination, in its medical department, of a new chair having for its title the Professorship of Physical Examination for Life Insurance. The Faculty have selected Dr. Charles F. Stillman, of New York City, as the first occupant of this chair.

THE number of Americans taking the clinics and special courses at Vienna, according to the *Gazette Médicale de Paris*, appears to increase with each succeeding year. The practical courses given by the "Privat-docents" are the most popular. The Americans are credited with paying liberally, and are welcomed with *empressement* by the professors of the various specialties.

#### REVIEWS.

A TREATISE ON THE DISEASES OF WOMEN, FOR THE USE OF STUDENTS AND PRACTITIONERS. By ALEXANDER J. C. SKENE, M.D., Professor of Gynecology in the Long Island College Hospital, etc. 8vo. New York: D. Appleton & Co., 1888.

THIS is a practitioner's text-book, for the use of practitioners. Dr. Skene has made no attempt to compile an encyclopædia, nor to state the theories regarding the functions and diseases of women; he has thought out for himself the problems which confront the practitioner of gynecology and embodies his conclusions in clear and forcible language. The work is especially well illustrated; after the discussion of each subject are placed clinical histories of cases explaining the previous text; the pictorial illustrations are the best we have seen upon this subject.

After a succinct account of methods and instruments for examination the facts known regarding menstruation are briefly stated; disorders of menstruation are treated

of by the narration of illustrative cases without theoretical discussion, an uncommon, but admirable method. Flexions of the uterus, often so little amenable to treatment, the author manages with fair success by amputating or resecting the cervix, correcting the imperfect invagination of the cervix by a plastic operation, or the stem pessary, as the case demands; he regards dilatation of the cervix to permit the introduction of the index finger dangerous and unnecessary.

Injuries to the pelvic floor are treated with great clearness and thoroughness. The difference between properly and improperly applied stitches; the fallacy of closing a skin laceration to the neglect of deeper structures; the importance of injury, relaxation, and paralysis of the deeper structures of the pelvic floor are all impressed upon the reader's mind and well illustrated; this is one of the most satisfactory sections of the work.

Sclerosis of the uterus, the result of areolar hyperplasia, receives especial description from Dr. Skene, by whom the descriptive term was introduced. Membranous dysmenorrhœa the author believes to be caused by deranged innervation, malnutrition, and ovarian excitation, and not by inflammation; his belief is founded on clinical experience.

Lacerations of the cervix are treated with the richness of illustration which is remarkable in the section on lacerations of the pelvic floor.

For displacements the author prefers the surgical term dislocations of the uterus. In discussing the mechanical support of the dislocated organ the views of Dr. Frank P. Foster are adopted; a section illustrating the abuse of pessaries warns against this blunder, while their judicious employment is commended and clearly illustrated. Alexander's operation has not been found a necessary expedient by the author. The electrical treatment of fibromata, as employed by Engelmann, is described; Keith's operative procedures in grave cases are narrated, and some very interesting cases illustrating the natural history and spontaneous cure of fibromata are recorded.

The author believes that "a great many affections of the brain and nervous system are due to disease of the ovaries." He applies the term "tubo-ovariotomy" to the operation often called "the removal of the uterine appendages"—a term he considers absurd. The diagnosis and operation for ovarian tumors are very clearly described; the author is not infected with the modern fear of morphia for pain after ovariectomy, and in his hands flatulence is relieved by quinine *per rectum*, and not by salines. The author's mental focus regarding affections of the Fallopian tubes is apparently normal, for they receive treatment proportionate to their frequency and importance at his hands. Diseases of the pelvic peritoneum and cellular tissue and of the bladder and urethra are treated with the same practical facility which characterizes other portions of the work.

From extensive investigations in Kings County Asylum, Dr. Skene has prepared an extremely valuable paper on "Gynecology in its Relations to Insanity in Women." While disease of the female reproductive organs not infrequently causes insanity the local disease in many cases is a symptom of the general implication of the cerebro-spinal centres of the organism in processes whose most marked manifestations are in a disordered mind. Hence there are cases in which the

gynecologist can aid greatly in restoring the balance of mind and body by removing local irritation, while there are other cases in which his efforts must be confined to diagnosis only.

This chapter closes appropriately one of the most practical works on gynecology in the language. In his desire to concentrate the reader's attention on the fact under discussion Dr. Skene omits all references and statements of theory only; what the writer has proved by personal labor and observation, admirably illustrated by words and drawings, is clearly and tersely given. We know of no more reliable source of practical information on gynecology than this book.

## SOCIETY PROCEEDINGS.

### NEW YORK ACADEMY OF MEDICINE.

#### SECTION ON PEDIATRICS.

*Stated Meeting, February 14, 1889.*

J. LEWIS SMITH, M.D., IN THE CHAIR.

#### TUBERCULOSIS OF THE TESTICLE IN AN INFANT.

DR. KOPLIK presented a child two years of age, whose father had died of chronic pulmonary disease at the age of thirty-six. The child had coughed since birth, and eight months ago the left testicle began to swell. At present the testicle is the size of a hen's egg, not painful to the touch; the scrotum showed a fistulous opening leading into the diseased organ; the pus from this fistulous tract contained tubercle bacilli. Another fistula was situated in the calf of the leg. The child suffered from occasional diarrhœa. There was an area of dulness in the lung, and numerous glandular swellings all over the body.

DR. A. JACOBI remarked that tuberculosis of the testicle is rare in the young. In the case presented, the many swollen glands indicated general tuberculosis. He thought local treatment out of question, and believed general treatment to be of little benefit. The fistula in the calf of the leg appeared to come from the fibula.

DR. CARR stated that Monks had reported a case of tuberculous testicle in a child five months old, in the *British Medical Journal*, December 27, 1884.

DR. J. H. HOLGATE showed a child, three years old, illustrating

#### REFLEX MOTOR DISTURBANCE,

from accumulated smegma underneath an adherent prepuce. The child had been unable to walk at the age of two and a half, its limbs being flexed at the hip and knee, and it suffered from dysuria. After proper treatment of the prepuce, these symptoms disappeared, and the child could now walk alone. He also showed a child one and a half years old, whose persistent enuresis had stopped after freeing the glans penis from an adherent prepuce.

DR. T. HUBER presented two children upon whom he had operated for

#### PERITYPHLITIC ABSCESS.

In the one case (a boy of ten) the prominent symptoms were pain in the ileo-cæcal region, vomiting, and diarrhœa. In consequence of beginning peritonitis with tympanites, the usual dulness and tumor were absent.



The aspirating-needle revealed pus, which was evacuated by a free incision followed by drainage. On the third day the dressing showed fecal matter. Recovery was complete after two weeks. In the second case the inflammatory tumor was located in the right iliac fossa. The abscess was cut down upon and evacuated. Four days later a large piece of sloughed tissue passed away, and a fecal concretion was found on the dressing on the twenty-third day. Recovery took place in due time. In his experience over a dozen cases of perityphlitis had terminated in resolution.

During childhood the appendix vermiformis is, as a rule, very long. Most cases of perityphlitis occur in males, previous peritonitis being a predisposing factor. A prodromal stage of several weeks is not unusual, a tingling in the right leg being one of the symptoms. Occasionally it may be difficult to differentiate between hip-joint disease, acute oöphoritis from gonorrhœal infection in young girls, and perityphlitis. But an examination per rectum will often suffice to locate the trouble. Aspirating-needles should be inserted obliquely. Gill Wyllie advocates laparotomy in the median line in doubtful cases.

Prognosis in the young should be guarded. As regards treatment we should order rest, liquid food, opium, morphine hypodermatically, and not purgatives. According to Lawson Tait, salines are indicated after operation. As a topical measure, the ice-bag or hot turpentine stupes should be employed, and the rectal tube to remove flatus. As regards operation, Dr. Bull advises, the more rapid the symptoms, the sooner surgical interference.

DR. HANKS remarked that, as far as his observations went, cold had some influence in promoting suppuration, which, when once established, should have prompt surgical treatment. The differential diagnosis between perityphlitis, intestinal obstruction, and disease of the tubes in girls might be difficult.

DR. JACOBI said that the laxative treatment in perityphlitis was, in his opinion, superior to opium treatment; the presence of a laxative in the intestine would assuredly do less harm than the presence of fecal matter. He remarked that authorities differ totally with regard to the treatment in perityphlitis. He remembered one case in which life was saved by not interfering in a period of collapse, and operating two weeks later. Perityphlitis is seldom primary; children may have many attacks and recover. It is impossible to make rules for all cases, and it is safe to wait a reasonable time before operating. Subacute and chronic peritonitis are common, and should receive attention in practice.

DR. WENDT spoke of injudicious interference in perityphlitis, and of the difficulty of formulating general rules for surgical treatment.

DR. WIENER said that nine cases had come under his observation; of the six operated upon, five were children. An operation was indicated by a sudden increase in symptoms. He preferred the opium treatment, gave enemata, and incised if he found pus.

DR. O'DWYER read a paper on

#### PULMONARY ATELECTASIS.

In fatal cases of croup he had always found atelectasis associated with inflammatory infiltration of the alveoli. Collapse begins when inspiratory power is diminished from mechanical obstruction or feeble inspiratory mus-

cles. The air pressure within the lung plus normal adhesion of pleural surfaces is greater than external atmospheric pressure. When a renewal of air is prevented, the residual air is absorbed. Every atelectatic lung is also a congested lung. As regards treatment of atelectasis in infants, he had found the momentary closure of the mouth and nose of service, and had devised an instrument for direct inflation through the larynx, the instrument acting as a catheter and larynx tampon at the same time. In conclusion, Dr. O'Dwyer requested a discussion on two points, viz: 1. Is atelectasis, uncomplicated with inflammatory changes in the alveoli, ever found in fatal cases of croup? 2. By what force is a collapsed lung inflated when freely exposed to the atmospheric pressure through an opening in the pleural cavity (*e.g.*, empyema)?

DR. NORTHRUP opened the discussion by stating that classical atelectasis does not admit of an inflammatory definition. He had examined many lungs microscopically, and had never found a pure atelectasis in descending croup. Usually there was distinct evidence of capillary bronchitis and broncho-pneumonia, probably caused by insufflation.

DR. E. C. WENDT stated that in the cases under consideration he had always found inflammatory changes in the collapsed lung tissue, and that inflammation followed atelectasis. Moreover, a collapsed lung does not always expand, and if it did in the presence of an opening in the thorax, such an inflation might be favored by a valve-like opening which would interfere with free atmospheric pressure.

DR. H. JACOBI remarked that lobular atelectasis was the first stage in pulmonary collapse. Rarefaction of air and a viscid, mucous catarrh being frequent causes of atelectasis, innervation might also be lost. He was not prepared at the moment to give a definite answer to the second question.

DR. CARR suggested that expansion of a collapsed lung was probably favored by inflammatory adhesions.

DR. CAILLÉ remarked that we have two forms, the obstruction and the compression atelectasis. In the former inflammatory changes are found in the alveoli as a rule, and, according to recent research, the act of coughing may force bronchial secretion into the finer air-passages, and finally into the alveoli. In compression atelectasis inflammatory changes are not found, if the compressing liquid be removed in good time. When this is neglected we frequently observe that a collapsed lung does not inflate after late removal of the compressing cause. With regard to the force necessary to inflate a collapsed lung, he would state that in a case of double empyema following typhoid fever, which had recently come under his observation, he had incised and drained the thorax on both sides. The external atmosphere had free access to both sides of the thorax, but probably owing to adhesions the external pressure on a limited surface was not sufficient to overcome natural inspiratory action; thus the collapsed portions of the lung became inflated, and the patient—who finally made a complete recovery—could, by placing a whistle in his mouth, produce a whistling sound by inspiratory effort.

DR. O'DWYER closed the discussion by stating that with regard to the second question he could not accept the explanations which had been offered. In his opinion, the affinity of the hæmoglobin of the blood for oxygen

in a congested and collapsed lung was the true inflating power.

*Stated Meeting, February 15, 1889.*

A. B. JUDSON, M.D., CHAIRMAN.

DR. LEWIS H. SAYRE presented a case which was of interest on account of

#### DISEASE OF THE HIP AND KNEE IN THE SAME LIMB.

The boy, aged six years, three years ago had scarlet fever, which resulted in an otorrhoea. Some time afterward he was noticed to have disease of the right hip-joint, which was treated by rest in bed for two or three months, and afterward by traction apparatus. According to his parents, he apparently recovered in about nine months, with almost perfect motion. The instrument was then removed, and he was allowed to run about. The disease was redeveloped in the hip, and during this time he had acute synovitis in both knee-joints, which was treated by rest and plaster-of-Paris. The left knee has entirely recovered. When first seen, two months ago, the right knee was flexed to  $140^\circ$ , subluxated, and presented the usual deformity of chronic knee-joint disease, with excessive tenderness over the internal and external coronary ligaments. The right thigh was flexed on the pelvis and abducted, there was considerable muscular spasm, and he presented all the evidences of disease of the hip-joint, with the second stage pretty well advanced. He was treated first by rest in bed, with extension made in three directions, viz.: (1) on the thigh in the line of the deformity of the hip; (2) in the axis of the leg; and (3) just below the head of the tibia, to draw it forward and decrease the angle. Now the flexion at the hip has almost disappeared, and that at the knee is much improved. The question arose, How to construct an apparatus which would allow the boy to get around, and make traction at the same time upon both the hip- and knee-joints? He had had an instrument constructed, consisting of his father's ordinary knee-extension splint, with an extension piece under the foot, and supplemented by a pelvic belt and a ratchet-bar like that used in the ordinary extension apparatus for the hip-joint. It is applied with plasters above and below, to fix the knee-joint, and extension is made on this joint by a ratchet, as in the ordinary hip-splint. So far, the case has done extremely well with this apparatus. He presented him partly as a curiosity, and partly to get suggestions for improving the mode of applying the apparatus.

DR. A. B. JUDSON was reminded of Dr. Hilton's apparatus mentioned in his book on *Rest and Pain*. He had amputated the knee, and the patient recovered rapidly from the hip disease. Hilton explains this by saying that the amputation above the knee enabled the muscles to keep at rest, or, as he puts it: "In fact, I may say, the hip-joint was cured by cutting off the leg."

DR. N. M. SHAFFER had a case with disease of the hip, knee, and ankle, all on the one side. He first put on a modification of Dr. Taylor's Dows' instrument, supplementing it with a lateral bar on the inside, and an adjustable knee-joint, so that the joint could be placed at any angle desired. The instrument was placed inside the shoe, and a traction rod below the knee. He finally put on an apparatus which made traction on the hip,

knee, and ankle, at the same time. The patient entirely recovered. The advantage of having an adjustable knee-joint is, that one can place the instrument so as to correspond with the exact angle at the knee. With a traction rod above and below the knee, and adhesive plaster independently connected with each traction point, one can get very excellent results.

DR. A. M. PHELPS said that the apparatus seemed to fix the knee-joint to a certain extent, but he would suspect a little giving at the knee, or flexion at the hip, from the movement of walking. He had usually employed an instrument similar to the one used by Dr. L. A. Sayre in connection with a hip splint but not attached to it; when the patient stepped it allowed the knee to move up and down, but there would be no motion at the knee-joint. A later report on the case presented would be interesting, with reference to the question of relapse.

DR. H. L. TAYLOR read a paper on the

#### PREVENTION AND TREATMENT OF CRURAL ADDUCTION.

(See page 315.)

DR. GIBNEY asked whether the motion in the hip which was present when the case first presented itself, was progressive or not, because the statistics of Drs. Shaffer and Lovett showed that the amount of motion did not increase after the cure of hip-joint disease. Dr. Taylor's case seemed to have had considerable increase in the motion from the time when it was pronounced cured.

DR. TAYLOR replied that the patient was thirty-five years old now, and had had the disease since she was nine years of age, so that the early history of the case was necessarily rather obscure. She was twenty years old when she first came to the New York Orthopaedic Dispensary, and when Dr. C. Fayette Taylor resigned she followed him, and continued under his treatment. She came to the dispensary in the condition mentioned, and all that he knew was that since then she has been well for several years, with an amount of motion which, so far as he could estimate, had remained practically unchanged.

DR. SHAFFER was especially interested in the study of the muscular relations of these conditions, to which attention had been called, and wished to speak especially on that point. He did not know why we have adduction when we suppose our cases to be cured. When Dr. Lovett and he were studying the cases they reported, he was struck by the fact that cases supposed to be cured, and who left the dispensary in pretty good condition, with a tolerably straight limb, without much adduction, after eight or ten years' release from active treatment, would show on examination not only an increased adduction, but also lessened mobility; and the question presented itself to them whether the cases really were cured when discharged. He has come to believe that adduction occurs only in cases where there is a condition of disease which has not been absolutely cured. These cases were, of course, dispensary patients, but they were discharged as cured only after being studied for perhaps two or three years. He pursues the same lines of treatment as Dr. Taylor has mentioned, when he can properly control the conditions of treatment, his apparatus being based on the same general principles; but he thinks the apparatus should represent more distinctly the element of traction than is done in the excellent instruments presented for

examination. The question he especially emphasizes, is that as a result of study and experience we discharge our cases when there is tolerably good motion, and perhaps only a very slight degree of adduction or of rotation, and the case is regarded as cured. Such cases ten years later show lessened mobility and increased adduction. The muscular expression in these cases is very important, and enables us to make our diagnosis in hip disease long before we have deformity; and so he felt that in the cure of hip disease we should regard the muscular signs and the tendency to adduction as showing that protective treatment has not been pursued long enough. He asked whether the sign of adduction, after a supposed cure, should be regarded as a sign that there is an irritation or some lingering disease which gives, so to speak, a reflex contraction of the muscles, corresponding to that observed in the earlier stages of the disease.

DR. PHELPS thought that Dr. Shaffer was correct in saying that the muscles indicate the condition of the joint. There is a condition in the joint or about it, usually in the bone, which causes the reflex spasm. Why do we treat the spasm alone? It is only a symptom of the disease within the joint. In the treatment of adduction we should aim to immobilize the joint, to control inflammatory action in the joint, to control intra-articular pressure; and when this is done, we will not have muscular spasm. Any splint which will increase the intra-articular pressure is a wrong splint, and many of them do this. The armamentarium presented is highly ingenious; but more than fifteen years ago Dr. Sayre taught us, if we put these cases in bed and apply the long splint to the well leg with extension to the diseased one we relieve spasm and overcome deformity. He believed that is entirely correct. At the Post-Graduate Hospital, where he has a number of cases now, he has treated them in this manner, and when the muscles fail to yield he does not hesitate to cut them, and overcome the deformity. He then puts the limb in proper position, so that when he makes extension the muscles are not used as a fulcrum and the limb as a lever, thereby producing intra-articular pressure, which he believes to be one element of destruction in hip-joint disease. Extension is made in a line corresponding to the axis of the neck. It is well in the case of children to put them in some fixative apparatus, such as the cuirass or portable bed; but, in any case, keep the joint absolutely immobilized. After this period has passed, by using a modification of the long traction splint we prevent crural adduction, flexion, and many of the abscesses which follow, and put our patients under the most favorable circumstances for cure. Intra-articular pressure is thus relieved, and Nature will take care of such a case if she can do it at all. These expensive instruments are not available among the poorer classes, neither do they fulfil all the requirements in the management of these deformities when disease is frequent.

DR. SHAFFER thought that Dr. Davis ought to have the credit for making the original statement that we should not use the muscles as a fulcrum so as to increase the pressure in the joint. In his book he says: "When the extension force is used, do not use the bone as a lever, prying over the fulcrum (contracted muscles), forcing the head of the bone up into the acetabulum." That was written in 1867, and, so far as he knew, was the first positive statement regarding the incorrect principle of

applying traction in the wrong line, and showing the reasons why we should not do it. With all due deference to Dr. Sayre, it seemed to him that Dr. Davis ought not to be forgotten, for he believed he was the first one to bring it prominently before the profession.

DR. PHELPS objected to this on the ground that Dr. Davis did not tell us how to do it.

DR. JOHN RIDLON thought that the position taken by Dr. Phelps was one of considerable importance—that it should be our aim to prevent this deformity of adduction as well as to cure it when the cases from somebody else come to us with it. He was very glad that Dr. Taylor so frankly brought the matter forward, and stated that the majority of these cases treated by traction with portable apparatus do get well with flexion and adduction. When a patient comes to us with flexion or adduction, the particular method of treatment adopted will depend upon whether it is cured or not. If it be cured, and the adductor muscles are shortened and not in spasm, and the leg is shortened from shortened adductor muscles, and not from spasm, he saw no reason why those adductor muscles should be stretched rather than divided. If the case be not cured, and the adduction be due to muscular spasm, then we should treat the joint disease rather than try to relieve the adduction; and upon that comes up the question whether traction in any line is advantageous or is harmless in a case of hip disease with adduction.

It seemed to him that traction upon a leg in a patient whose adductor muscles are in spasm does produce some pressure at the point of the disease in the bone, whether intra-articular or extra-articular. He did not think, however, that we are perfectly unanimous as to whether that pressure is harmful or not. If the adductor muscles are in spasm, let us go to work deliberately and rationally, and endeavor to treat the case just as we would if we saw the case for the first time in the earlier stages of hip disease. Just so long as any muscle or group of muscles is in spasm, and which, if left to itself, will produce deformity in any line, that joint, as a joint, should be kept in perfect rest; there should be absence of motion and absence of pressure, whether from superincumbent weight or muscular spasm; and if the deformity is due to muscular spasm, he had no question in his own mind that the deformity will be relieved so soon as the disease is cured.

DR. SHAFFER thought we were not justified, if we have reflex muscular contraction, in dividing muscles which would yield under ether, simply on the principle that we assume that it is reflex contraction. After being divided, the trouble recurs as soon as union has taken place; at least, he had seen such cases.

DR. PHELPS, in answer to a question from Dr. Shaffer, as to what was his rule in dividing muscles, said: Any muscle which can be stretched under ether, or which by extension for a short time will allow the deformity to be overcome, he should not think of dividing; but if, in a case of hip-joint disease of one or two years' duration, the tensor vaginae femoris, the fascia lata, and the adductors were tense and would not yield to force under ether, he would cut these tissues. He could do it with perfect safety, and pull the limb down straight, and then put on proper retaining apparatus.

DR. JUDSON said that the question, "What determines the direction of the limb in the deformity of hip disease?" was one of considerable interest. Why should one patient



present abduction and another adduction, and why does one patient have extreme, and another one moderate flexion?

It appeared to him probable that the limb, as a rule, assumes that position which the patient finds most habitually comfortable and convenient. If, for instance, the patient finds that with the limb in a certain position he is able to avoid inadvertent motions and accidental concussions, the limb will be found in that position. If he is in bed for a long time with a painful joint, the position will be extreme flexion and adduction, because the painful joint is thus made easy. The choice is not so much the result of deliberate experiment and deduction, as the result of instinctive and reflex action. If these views are correct, it ought not to require much force to reduce the deformity in the acute stage; and he had no doubt that it is common to see the deformity of the early stages taking different directions and degrees from time to time in a given patient. The simplest methods sometimes suffice to effect a change. For instance, the long hip splint, even if it had no other function, would be useful, because it combats extreme flexion of the thigh by keeping the knee straight, extreme flexion of the thigh being impossible unless the hamstrings are relaxed by flexion of the knee. He recalled the case of a patient in whom the traction of the hip splint, the patient being in bed, converted marked adduction into marked abduction, which in turn was reduced by the unconscious action of the patient when he began to walk, still wearing the hip splint. But this tractable condition of the joint is, of course, found only in the early or acute stage of the disease. In time, structural changes take place, and compel a resort to force. The correction of adduction caused by structurally shortened muscles and ligaments, is a very difficult but by no means impossible thing. The apparatus shown and explained for effecting this object by the use of the rack and pinion, with pressure applied to the os innominatum of the opposite side, appears to be nearly perfect as a mechanical device, and accomplishes the object intended.

DR. TAYLOR, in closing the discussion, said that the paper was on the subject of adduction, and not on the treatment of hip disease, which is a very much broader subject, and that the earlier forms of adduction from reflex muscular spasm required nothing more than the proper traction treatment. He gave two or three classes of cases in which the treatment of adduction would be different, according to the stage of the disease, and he especially emphasized—that that was the object of the paper—the treatment of adduction in old cases who had had hip disease and returned for treatment ten to thirty years after the deformity had occurred. In these cases there was structural shortening of the muscles, connective tissue, and ligaments, and in many of them there were very firm adhesions in the joint. The plan of treatment which he recommended is applicable especially to such cases, whether due to hip disease or any of the other conditions mentioned. He did not wish anybody to infer that one must have all this paraphernalia in order to get on in the earlier stages of the disease. He was quoted as saying that the majority of cases properly treated with traction, get well with adduction. What he did say was, that the majority of cases one sees on the street have been cured with adducted thighs. He was far from thinking that those patients were treated by what he would call

properly applied traction. On the contrary, adduction can nearly always be avoided where one can get the co-operation of the patient, and after it has occurred, it is nearly always susceptible of cure by proper mechanical means, no matter how long after its occurrence the patient comes under treatment.

He was the last one to advocate symptomatic treatment in hip disease. Our whole plan of treatment is based on thorough and prolonged protection of the joint, and under this plan deformity and other severe complications are much less common than under less thorough methods.

## CORRESPONDENCE.

### AUTOMATIC AMBULATION.

To the Editor of THE MEDICAL NEWS,

SIR: During a visit to Paris, a few days since, I saw the following very extraordinary case brought into his clinic at the Salpêtrière by Charcot, and described by him to be a case of "l'automotisme ambulateur."

The patient, a man of, perhaps, forty-five, had been for nineteen years a bookkeeper in a merchant's counting-house, and had always enjoyed the utmost trust and confidence of his employer, who retired a year ago from his business, which went into other hands, the old bookkeeper remaining, however, in his confidential position. When brought into the clinic the patient, to all appearances, was perfectly healthy and sane, giving the history of his trouble clearly and in detail; explaining that he had from time to time suffered from lapse of consciousness; that during these periods he seemed perfectly rational to those about him, but to himself the time was a blank, and that these periods had lasted from a few hours to several days. The history of these *absences* were as follows:

The first, it seems, came upon him in the year 1887, as he left the counting-house on some errand to the Rue de Villière, Paris. He went his way, but lost all idea of time and place, and finally came to himself late in the evening in the Place de la Concorde, having wandered for fourteen hours. When he came to himself, he found he had the same amount of money in his pocket as in the early morning. It was plain that he had taken nothing to eat or drink during these fourteen hours.

His second attack was during the spring of 1887, when he lost all consciousness for *forty-two* hours, and awoke in the Seine, having jumped from his coupé. He was, fortunately, rescued by a policeman. It seemed that after his unconscious peregrinations he had taken a ticket upon the Railroad de Ceinture, and having passed the station where he evidently intended to get out, he had at the above time rushed from his coupé into the river. The shock of the cold water brought him again to consciousness.

A third time, in August, 1887, just as he was about to enter his own house, after business hours, he had a sudden attack of his malady, and only awoke from his living sleep after fifty-three hours, on the Pont d'Ansières, having been in fact aroused by a fisherman on the bridge, who, seeing him peering intently into the water, asked him, "What are you doing here so early?" He found himself covered with mud, and his shoes completely worn out; he had evidently been walking without interruption for nearly three days, and without food or drink.

After this last attack, recognizing that they were becoming not only more frequent but of longer duration, he consulted Charcot. The professor put him on a course of treatment, and also gave him a certificate stating that the bearer was subject to these attacks of "automatic ambulation," as he called them, and which the poor patient always carried in his pocket.

Under Charcot's handling the attacks disappeared, and all treatment was stopped. In February of this year, however, as he left one morning his place of business to make a deposit, with some 700 francs on his person, he again lost all consciousness, to awake *eight* days later, to find himself on a bridge in a strange city, which turned out to be Brest. Upon this occasion it seems that the loud music from a military band in passing close to him had called him to consciousness. Fearing himself, the poor man approached a gendarme, and told him briefly his story, adding that when he left home he had 700 francs, whereas at present he had but 500, and showing the man the certificate of Dr. Charcot. The stupid man did not, of course, understand, arrested the poor devil as a thief, or what not, and threw him into the lock-up, from which place he was finally rescued by a telegram from Professor Charcot. Since this last attack he is again under regular treatment.

This peculiar and interesting form of disease Charcot has named "*l'automotisme ambulaire*," a malady in which the sufferer comes and goes, and is apparently in perfect possession of all his faculties, and yet to the man himself his every action is unknown. The writer knows of no parallel case, though he has seen almost exactly the same symptoms caused by liquor. In this latter case the man was absolutely sober, to all appearance, and perfectly rational, free from all and any of the usual effects of alcohol, and yet later he remembered nothing whatever that had passed. His friends recognized the extremely peculiar effect wine had upon him, and had always watched him most carefully.

An interesting study has lately been published in Munich on what we know as "roaring" in horses. This peculiar form of apparent dyspnoea is, it seems, caused by a paralysis of the abductor muscles of the larynx, the posterior crico-arytenoid on one side. I shall obtain a copy of the paper in Munich, and write more fully then about it.

Respectfully yours,

F. DONALDSON, JR.

STUTTGART, March 2, 1889.

#### BOVINE TUBERCULOSIS.

THE consideration of some plan by which the alleged injurious consequences that may result from tuberculosis in animals can be averted has recently engaged the attention of the College of Physicians of Philadelphia. If all the allegations regarding the communicability of tubercular disease to the human species by means of infected milk or flesh, are to be accepted as true, they may well excite great disquietude and even alarm. If the recommendations which were presented should be carried out, and the official inspectors proceed to execute their functions in strictest conformity to a proposed law that might condemn all animals affected with tubercular disease, the slaughter would be simply enormous, and perhaps unnecessary. On the assumption that all flesh and milk of tubercular animals are dangerous to partake

of, on the other hand, there would be a general abstention from animal food and milk, as well as shrinkage of their money value.

Obviously we cannot afford to sacrifice our herds needlessly, neither should there be unnecessary alarm about the quality of the food on which we are accustomed mainly to rely. It is important therefore to ascertain whether it is practicable for an expert inspector to determine, on examination, the existence of bovine tuberculosis? Is there any liability that the milk may become contaminated during the progress, or in certain stages, of the disease? At what stage of the disease should the animal be destroyed?

During the years 1883 and 1884 an opportunity was afforded of observing an epidemic of tuberculosis which affected the herd of Holstein cows on the farm of the Willard Asylum for the Insane, in the State of New York. An interesting report upon this disease as it here occurred was made by Dr. Blaine, one of the assistant physicians who was detailed for this purpose. Attention was attracted to the herd in 1883, when it was noticed that there were many laggards which lingered behind the herd, that they were losing flesh, and had a rough coat; that they had some difficulty in breathing, and had a slight cough. On making a post-mortem the nature of the disease was discovered. On an official examination made by Prof. James Law, of Cornell University, it was found that the entire herd, numbering about 150, was affected, and on his advice all were killed, not at once, but gradually. Abundant opportunity was thus afforded of making a diagnosis in every case, which was verified by examination after death.

The results demonstrated that it was entirely practicable for an expert to make a correct diagnosis as to the existence of tuberculosis and the successive stages of the disease. The animals were slaughtered after the cervical glands were enlarged and tubercular suppuration commenced. Tubercular deposits were found in the milk bag, and a communication between the points of suppuration and the udder was demonstrated in many instances, showing how the milk might be contaminated. Before the stage of suppuration was established, examination with the lactometer showed that the milk was decidedly deteriorated. The depreciation ranged from thirty to forty per cent. in solid constituents. These facts would further go to show that it is not only practicable but important that an official inspector should have power to examine milk cows kept for dairy purposes and milk supply, and direct the removal and destruction of an animal found in advanced or suppurative stages of tuberculosis, or with a diseased milk bag.

Bovine tuberculosis usually affects the glands, lungs, liver, and organs generally, but the flesh is rarely the seat of deposit.

An examination into the condition of a large number of herds owned by farmers in the vicinity of the Asylum revealed the fact that from twenty-five to thirty per cent. were affected in various degrees, and that the disease more frequently attacked animals that were six years old or beyond that age. The cattle purchased for consumption were procured in Buffalo and brought to the Asylum, where they were slaughtered. They were known as "western cattle," and were about three or four years old. At the Asylum abattoir it was found that these animals were quite exempt from tuberculosis. No cases of active

disease were found; and only occasionally a calcified tubercle was discovered. These examinations showed a decided exemption from disease as compared with animals reared in that part of western New York contiguous to the Willard Asylum, and this fact would be established, we believe, as the result of careful observations in this vicinity.

In the epidemic which we have noticed, it was considered as established that the disease was transmitted by three imported bulls, by contact, and the ingestion of tuberculous matter while the herd was grazing. Although the Asylum community numbered about 2300, and the disease in the herd had existed for some time probably before it attracted serious attention, it was also observed that the annual mortality from phthisis had been steadily declining.

J. B. C.

### NEWS ITEMS.

**The Quarantine Conference**, holding its session at Montgomery, Ala., adopted, March 6th, the report of its Committee on Quarantine. The report recommends that the health authorities shall regulate the hauling of persons, baggage, or freight from infected places during yellow fever epidemics, and that the regulations and restrictions shall be such as to afford protection to endangered communities; that at all seasons of the year, and under all circumstances, the simple passage of trains should be allowed, even when carrying sick refugees to other localities, and that well-digested rules to govern quarantines should be prepared, published, and enforced whenever necessary; that only competent physicians who have had experience with yellow fever should be made inspectors of quarantine stations and have power to administer oaths and detain passengers and baggage; that State boards of health should be authorized to enforce quarantine regulations; that quarantine stations at Southern seaports are of great advantage and should be continued; that ticket agents should be required not to sell tickets during the yellow fever epidemics, and that travellers shall be required to have health certificates.—*Boston Med. and Surg. Journal*, March 14, 1889.

**Nursing Infants with Asses' Milk.**—In recent years, in France, conscientious efforts have been made to ascertain the principal causes of the loss of population, and it has been demonstrated by numerous facts that one of these causes consists in the physical degeneration induced by deficiency of alimentation in infancy; and the most eminent physicians of Paris, and the Director of Public Assistance, have endeavored to modify and improve the system of nutrition in the public charitable institutions, providing for recently born children lactation adequate to the necessities of the temperament and constitution.

In the Hospital for Infants' Diseases, situated in Sabres Street, there exists a section for rickety boys and girls, whose miserable aspect produces an impression of pain upon the mind—unfortunate beings who have inherited the organic vices of their parents, and who suffer from anæmia's cruel tortures.

The administration of the hospital is arranged in two separated pavilions, where there is much ventilation, with large windows that look out upon a garden, and whose walls have double rows of willow cradles perfectly equipped. The newly born receive here the personal

care of the establishment, beginning with being weighed in the balance the same day they make their appearance, the operation being frequently repeated, almost every month, in order to determine with exactness the development of the child. The little one is subjected to an especially nutritious diet of the most tonic kind, if it had been previously fed from a refractory goat liable to convey contagious germs, it having been found by experiment that the milk of this animal, although possessing nutritive principles of the most salutary kind, presents the inconvenience of communicating by absorption the effects of those nervous accidents to which the goat is subject.

The public charities of Paris, advised by the wise doctors of medicine, have substituted for the milk of goats that of the ass, and have installed an ample yard near the pavilion of the rickety and scrofulous children, which is only separated by a short, covered passageway. Nothing is more picturesque than the spectacle of the lactation of the babes in this enclosure every morning.

The nurses, dressed in dark gowns with white caps and aprons, each carrying a child on the right arm and a little seat in the left hand, present themselves in exact turn to the women who have charge of the animals, and they hold the child, applying its lips to the teats of the docile animal. The children suck with avidity the liquid nutriment, which is fresh and of agreeable taste.

The Administration of Public Assistance of Paris has calculated that one young ass is able to lactate abundantly for a space of nine or ten months, and when this period has passed they are sold and replaced by others. It is well known that the milk of asses, by its vivifying qualities and nutritious principles, assimilates in a great degree the milk of the nurse, and these disinherited and sick children, enjoying its beneficial effects by its permanent and methodical use, are restored little by little to health and vigor.—*Scientific American*, March 16, 1889, from *La Ilustracion Espanola*.

#### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 12 TO MARCH 18, 1889.

By direction of the Secretary of War, JEDEDIAH H. BAXTER, *Chief Medical Purveyor*, will proceed to New York City on public business connected with the Medical Department, and, on completion thereof, return to his station in this city.—Par. 18, S. O. 57, A. G. O., Washington, March 11, 1889.

By direction of the Secretary of War, ROBERT W. SHUFELDT, *Captain and Assistant Surgeon*, having been found incapacitated for active service by an Army Retiring Board, is granted leave of absence until further orders, on account of disability.—Par. 7, S. O. 56, A. G. O., Washington, March 9, 1889.

By direction of the Secretary of War, RICHARD W. JOHNSON, *Captain and Assistant Surgeon*, is relieved from duty at San Carlos, Arizona, and will report in person to the commanding officer Whipple Barracks, Arizona, for duty at that station.—Par. 15, S. O. 57, A. G. O., Washington, March 11, 1889.

#### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING MARCH 16, 1889.

HESLER, FREDERICK A., *Assistant Surgeon*.—Detached from the Naval Hospital, New York, and ordered for examination preliminary to promotion.

OGDEN, FREDERICK N., *Assistant Surgeon*.—Ordered to the Receiving-ship "St. Louis," Navy Yard, League Island.

BRYANT, PATRICK H., *Assistant Surgeon*.—Detached from the Receiving-ship "St. Louis," and ordered to the Naval Hospital, Chelsea, Massachusetts.